

CHAPTER 3

One-Call Center Task Team Best Practices

3.1 CHAPTER SUMMARY

The role of the one-call center is to receive notification of proposed excavations, identify possible conflicts with nearby facilities, process the information, and notify affected facility owners/operators.

The use of the term “caller” throughout this Report embodies a variety of techniques to request locates, including non-voice communications such as: fax, Internet, or direct-user entry. The term “facility owner/operator” is expanded to include agents who may be locating facilities on their behalf.

The process used by the One-Call Center Task Team was to evaluate existing practices in search of the best practice for each finding. A concise practice statement and practice description has been developed by the Team. These areas of study and best practices can be summarized as follows.

3.1.1 Members and Participation

- Public awareness and education programs are developed to foster a cooperative approach towards safe digging.
- The one-call center is structured so that an excavator need only make a single call and a facility owner/operator need belong to only a single one-call center.
- A clear agreement defining each party’s role and responsibilities exists between users.

3.1.2 Operations and Procedures

- A single toll-free phone number is available to callers 24 hours per day, 7 days per week.
- Locate requests are voice-recorded, accessible, and retained.
- The ticket number and names of the facility owners/operators are provided to each caller.
- The one-call center documents operating procedures, policies, and training.
- The one-call center has methods to coordinate large projects, designer requests, and other special needs.

3.1.3 Systems and Equipment

- Mapping and data are current and routinely verified by facility owners/operators.
- The one-call center accommodates growth and change.
- The ticket includes sufficient information to determine the location of the proposed excavation and, through the use of technology, avoids over-notification to facility owners/operators.
- Plans are in place to provide for disaster recovery, security, system redundancy and new-millennium transition.
- Users are provided a means of direct electronic entry of locate requests.

3.1.4 Performance

- Performance standards are in place for the purpose of promoting accuracy, cost effectiveness, and efficiency.

Through the implementation of these best practices, one-call centers can evaluate their operations to provide better communication between excavators and facility owners/operators. This will accomplish the goal of protecting the public, excavators, and the environment and preventing disruptions to public services and damages to underground facilities.

3.2 BACKGROUND AND MOTIVATION

3.2.1 Particular motivation for this Task Team

The One-Call Center Task Team worked to identify and describe one-call center best practices that are currently used to: receive notifications of proposed excavations, identify possible conflicts with nearby facilities, process the information, and notify affected facility owners/operators for the purpose of protecting the public, excavators, and the environment and preventing disruptions to public services and damages to underground facilities.

3.2.3 Goals for this Task Team

The One-Call Center Task Team's goals were to identify existing one-call center operation best practices. The team established a panel of subject matter experts to evaluate best practices of one-call centers and to forward constituent issues for feedback. Information gathered pertaining to the needs of the one-call center, the owners/operators, the public, the excavating community, and state and federal governments were considered and evaluated by the team. Through consensus, recommended best practices were identified and accepted for the final Report.

The process used by the Task Team was to:

- include industry stake holders,
- clarify existing practices,
- identify best practices for one-call center operations,
- achieve consensus on best practices,
- develop a practice statement, description, and references to support best practices,
- identify areas of emerging technology for future consideration,
- coordinate with the Linking Team to forward issues more appropriately addressed by other teams, and
- take ownership of issues identified by other teams that were within the One-Call Task Team’s charge.

3.3 TEAM MEMBERS

The One-Call Center Task Team members are listed below. A brief biographical sketch of each Team member, that serves to validate their participation in the Study effort, is included in Appendix F, “Common Ground Study Team Member Biographies.”

Team Member	Representing⁸	Employer
Mike Ames	INGAA	ENRON Pipeline Safety Group
Danny Barrett	NTDPC	AT&T
Zach Barrett	DOT, RSPA, OPS	DOT, RSPA, OPS
Kirby (Tim) Brubaker	NTDPC	AT&T
John Collins	Louisiana DOT	Louisiana DOT
Roger Fleming	API	Explorer Pipeline Company
David Frey	OCSI	Louisiana One-Call
George Glenn, Co-Chairperson	OCSI	North Carolina One-Call Center, Incorporated
Team Member (cont.)	Representing (cont.)	Employer (cont.)
Jim Holzer	OCSI	One Call Concepts, Inc.
Glenn Johnston	AGC, NUCA	Glenn Johnston, Inc.

⁸ See Appendix D for a detailed list of acronyms.

Steven Kindschy, Co-Chairperson	AGA	Consumers Energy
Patti Lama	Electric Power Transmission and Distribution Industry	ENRON Portland General Electric
Lee Marrs	OCSI	Texas Excavation Safety System, Incorporated
Michael McNamara	OCSI	One Call Systems, Inc.
Gregory A. Obsines	OCSI	Ohio Utility Protection Service
Ron Olitsky	OCSI	Underground Service Alert of Southern Cal
Mark Palma	NULCA	Hinshaw & Culbertson

Others that participated in the Task Team’s discussions but did not participate in the consensus decision process include:

Team Participant	Representing	Employer
Claudette Campbell, Linking Team Liaison	OCSI	Utilities Protection Center of Georgia, Inc.
Sandra Daziani, Emerging Technology Liaison	OCSI	Arizona Blue Stake, Inc.

3.4 DATA COLLECTION AND EVALUATION PROCESS

3.4.1 Information sources

Various company procedures, standards and regulations, operating practices, and documents were reviewed and referenced during the Task Team’s efforts. These included:

- One Call Systems International (OCSI) Voluntary Recognition Program;
- “Model One-Call For The 20th and 21st Century,” AT&T;
- Existing operating practices from various states’ one-call centers;
- One-Call Systems International Directory;
- 49CFR Part 192;
- 49CFR Part 198; and
- NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

3.4.2 Process for Collecting Information

The Task Team identified a preliminary list of best practices. Task Team members volunteered to become advocates for each best practice based on their individual knowledge and experience. Each advocate was

responsible for researching the best practice and developing a Practice Statement, Practice Description and References which were then presented to the Team for further discussion and evaluation.

3.4.3 Process for Selecting Issues

The One-Call Center Task Team did not attempt to separately identify or evaluate issues. It was considered that all existing industry practices inherently address some underlying issue. The issues can be ascertained by studying the practice.

3.4.4 Process for Evaluating Practices

The One-Call Center Task Team followed the process steps noted below to identify, develop, evaluate, and achieve consensus on the best practices noted in this chapter. In this process, it should be noted that regardless of who the practice advocate was, all Task Team members participated in the consensus agreement process on each Practice Statement, Practice Description, and acceptance of the practice. The logical process the Team followed was:

- The candidate practice was submitted or drafted by someone. This could have been an item submitted by the public or existing practices brought to the table by a Task Team member.
- The Task Team discussed the merits of the candidate practice. A primary consideration at this point was whether the candidate practice was within the scope of the One-Call Center Task Team. If accepted as a valid candidate best practice, a practice advocate(s) was assigned to develop a draft practice statement and a draft practice description.
- The draft practice statement was discussed by the Task Team and was either accepted as written by the practice advocate or it was modified by the Team until consensus was achieved. In some cases, Team discussion and evaluation resulted in the practice being deleted from further consideration as a best practice.
- Each Team member communicated the agreed-upon practice statement to his/her represented industry constituents.
- The Team members gathered constituent feedback and brought it back to the Team for further consideration and determination of whether the previously agreed upon practice statement should be modified.
- The practice advocate(s) developed a draft description of the practice, generally based on the consensus practice statement.
- The draft practice description was discussed and was either accepted as written by the practice advocate(s) or modified by the Team until consensus was achieved.

- Each Team member communicated the agreed-upon practice description to his/her represented industry constituents.
- The Team members gathered constituent feedback and brought it back to the Team for further consideration and determination of whether the previously agreed upon practice description should be modified.
- The Team compiled the final list of agreed upon best practices.
- The Team prepared the chapter as input to the Study Report.

It should be noted that any Team member could present a candidate practice for consideration and/or volunteer to become the advocate for a practice. The process outlined above helped to ensure that each industry constituent was represented in the discussion of the merits of every practice.

3.5 FINDINGS

Following is the list of practices developed by the One-Call Center Task Team for which consensus among the Task Team members has been achieved.

1. Pro-active Public Awareness, Education and Damage Prevention Activities
2. Specifically Defined Geopolitical Service Area with No Overlap
3. Formal Agreements with Members
4. One-Call Center Governance
5. Single Toll Free Statewide Number with Nationwide Access
6. Hours of Operation
7. Voice Record of All Incoming Calls
8. Retention of Voice Records According to Applicable Statutes
9. Caller Feedback
10. Printed Ticket Recall
11. Documented Operating Procedures, Human Resource Policies, and Training Manuals
12. Documented Owner Verification of Data Submitted by Facility Owner/Operator
13. Flexibility for Growth and Change
14. Meeting Between the Excavator and Facility Operator(s) Initiated by One-Call Notification
15. One-Call Center Accepts Notifications from Designers
16. Locate Request
17. Practices to Reduce Over-Notifications
18. Disaster Recovery
19. Remote User Interface
20. Accept Multiple Reference Points for Locate Requests

21. One-Call Center Security
22. Hardware Designed to Tolerate a Single Point of Failure
23. One-Call Quality Standards

1. **Pro-active Public Awareness, Education and Damage Prevention Activities**

Practice Statement: The one-call center has a documented, pro-active public awareness, education, and damage prevention program.

Practice Description: The one-call center seeks opportunities to promote the need to “Call Before You Dig,” to enhance awareness of responsibilities to safeguard workers and the public and protect the integrity of the buried infrastructure, to foster a cooperative approach between the owners of buried facilities and the digging community toward the prevention of damage to buried facilities and to promote the service it provides.

Typical Call Center activities include: promotional items; media advertising; participation at safety meetings; seminars and trade shows; contractor awareness programs; distribution of education material describing how the one-call system works; maintaining a database of active members of the local digging community; mediating and rationalizing the expectations of both the facility owners/operators and the digging community; and participation in local damage prevention or facility location and coordination committees.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states’ one-call centers.
- C One-Call Systems International Directory.
- C 49CFR Part 192.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

2. **Specifically Defined Geopolitical Service Area with No Overlap**

Practice Statement: The one-call center(s) serving a specifically defined geopolitical area is (are) structured so that an excavator need only make one call, and a facility owner/operator need only belong to a single one-call center.

Practice Description: One-call programs are designed to promote ease of use for members (facility owners/operators) and for excavators. While this ease of use is enhanced when a one-call center serves a specifically defined geopolitical area that does not coincide with the service area of another one-call center, it is not essential.

There are three requirements a one-call program meets in order to be considered as having implemented this best practice:

- C The program permits an excavator to use a single point of contact to submit and follow up on a notice of intent to excavate and notify affected facility owners/operators.
- C The program permits a facility owner/operator to join a single one-call center and receive all appropriate notices.
- C The program is designed so that all pertinent information is shared among one-call centers in the event more than one exists.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

3. Formal Agreements with Members

Practice Statement: Each member of the one-call center abides by state statute where applicable or written agreement that states the rights and the responsibilities of the one-call members and the one-call center.

Practice Description: Operating procedures and bylaws are established. Procedures for the operation of a one-call center are simple. The concept is for service, not paperwork. Topics for procedures can be classified as: general, communications, center operations, reports, expenses and publicity. These topics could be expanded to include guidelines and whatever else is needed for a particular system. Bylaws vary, depending on the type of organization. In some instances they may prove unnecessary. If bylaws are adopted, simplicity is the key word. Items that could be incorporated include sections on membership (including rights), financial matters, meetings, elections and duties of officers. Any other agreements required are kept as simple as possible to facilitate understanding by all participants. Consideration is given to include “hold harmless” clauses, amounts of liability insurance, errors and omissions insurance, retention of records, cost allocations, reimbursements, area served (with options to expand as planned), and any special arrangements necessary. If an agreement to contract the service to an outside concern is made, it contains controls, checks and balances.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C One-Call Systems International Directory.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

4. One-Call Center Governance

Practice Statement: The one-call center is governed by a board of directors representing the diverse makeup of the constituent groups, for example facility owners/operators, designers, contractors/excavators, and government.

Practice Description: To ensure that a one-call system functions to the best benefit of the entire community, it is governed by a board of directors made up of representatives of the stakeholders. Board members are from a variety of industry types, such as facility owners/operators, contractors, designers, project owners and government representatives. Each board member is knowledgeable in their own industry and of how it interacts with the one-call system and all of the represented stakeholders.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

5. Single Toll Free Statewide Number with Nationwide Access

Practice Statement: The one-call center(s) have a single toll free statewide number with nationwide access.

Practice Description: There will be only one statewide toll free telephone number for the one-call center(s) to receive locate requests. This number has nationwide access, meaning that a caller can reach the center(s) from anywhere in the country.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

6. Hours of Operation

Practice Statement: The one-call center can process locate requests 24 hours a day, 7 days per week.

Practice Description: The one-call center has in place a process where a caller, at anytime of the day or night, every day of the year, who has a locate request can contact the one-call center and have that request processed.

References:

- C Existing operating practices from various states' one-call centers.
- C One-Call Systems International Directory.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

7. Voice Record of All Incoming Calls

Practice Statement: A voice recording is maintained of all voice transactions concerning requests to locate facilities.

Practice Description: A voice recording of telephone communications for locate requests is made to ensure a precise record of the activity is retained. This recording can be legally supported in court as well as used for damage investigations.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

8. Retention of Voice Records According to Applicable Statutes

Practice Statement: Voice records of all calls concerning requests to locate facilities are kept in retention according to applicable statutes.

Practice Description: Voice recordings are a factual record of the events that occurred between the caller and the one-call center. These factual records must be maintained and accessible until the applicable statute of limitations in the state have expired. Since these laws vary from state to state, no specific time period is set forth as best practice. In the absence of notice by some party to the contrary, after the expiration of the statute of limitations the records may be destroyed. The one-call center has a procedure for processing requests for voice information.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

9. Caller Feedback

Practice Statement: The one-call center provides the caller with the ticket number and the names of facility owners/operators who will be notified for each locate request.

Practice Description: Providing the locate request number and the names of the facility owners/operators who will be notified enhances the efficiency of the one-call process. When provided the names of the facility owners/operators, the excavator knows which owners/operators will be notified in the area of the planned excavation. This helps the excavator determine if the facility owners/operators have responded to the locate request.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C “Model One-Call For The 20th and 21st Century,” AT&T.
- C Existing operating practices from various states’ one-call centers.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

10. Printed Ticket Recall

Practice Statement: The one-call center can provide a printed copy of any ticket for a period of time determined by applicable statutes.

Practice Description: In the event of a damage investigation, litigation, or other event, it is often necessary to have a hard copy printout of a location request ticket. Local governments have statutory requirements for record retention in such cases. The one-call center has the ability to produce, as necessary, a copy of a location request ticket for the appropriate statutory period.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states’ one-call centers.
- C 49CFR Part 198.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

11. Documented Operating Procedures, Human Resource Policies, and Training Manuals

Practice Statement: The one-call center has documented operating procedures, human resource policies and training manuals.

Practice Description: The one-call center has documented operating procedures, human resource policies, and training manuals. Training manuals, practices, procedures, and policies are on the premises in a designated area or place, dated, and available for reference.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

12. Documented Owner Verification of Data Submitted by Facility Owners/Operators

Practice Statement: The one-call center returns the geographic description data base documentation to the facility owner/operator annually and after each change for verification and approval.

Practice Description: The one-call center can only work with the information related to the existence of buried facilities that its members provide. It is important that the one-call center be able to produce evidence that a member's data is accurate, according to that member. Regular verification of data is a part of the documented agreement or operating procedures between the owner or operator of buried facilities and the one-call center. Any deletions or additions made by the member are entered into the data base and documentation of the change sent back to the member for verification, prior to activation.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

13. Flexibility for Growth and Change

Practice Statement: The operating plan of the one-call center is sufficiently flexible to accommodate growth and change.

Practice Description: A successful one-call center maintains flexibility to respond to changes by forming and maintaining a responsive organization whose Board of Directors' composition allows adequate representation of the needs of all stakeholders.

A Board's ability to respond to change will be enhanced by drafting bylaws and operating procedures that reflect the current environment in which the one-call center serves. The most successful Boards review these documents on an ongoing basis to make sure they continue to reflect or respond to current conditions. These Boards conduct regular strategic planning sessions during which they review the current state of the Center's major systems, programs and outreach activities. Such assessments help them identify stakeholder needs for future growth and development.

Many members of Boards and center management teams keep themselves informed about and involved in the one-call industry by joining associations and attending conferences or other educational events that help them to better identify new opportunities for growth and change.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C “Model One-Call For The 20th and 21st Century,” AT&T.
- C Existing operating practices from various states’ one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

14. Meeting Between the Excavator and Facility Operator(s) Initiated by One-Call Notification

Practice Statement: The one-call center has a process for receiving and transmitting requests for meetings between the excavator and the facility operator(s) for the purpose of discussing locating facilities on large or complex jobs.

Practice Description: The one-call center relays requests for job site facility meetings for excavators who request them with facility owners/operators. If a meeting is required to show the limits and schedule of the work, the one-call center indicates that a meeting is requested. The one-call center requires that the excavator provide sufficient information to fully identify the boundaries of the proposed work site. A meeting request does not necessarily eliminate the need for a locate request.

References:

- C Existing operating practices from various states’ one-call centers.
- C One-Call Systems International Directory.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

15. One-Call Center Accepts Notifications from Designers

Practice Statement: The one-call center accepts design requests and has the ability to process them as designated by the facility owners/operators.

Practice Description: To facilitate damage prevention, project designers have a need for access to facility location information from facility owners/operators. If a design request is received, the one-call center provides a listing of facility owners/operators directly to the designer. Once the list is identified, the one-call center processes the request as designated by each facility owner/operator.

References:

- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

16. Locate Request

Practice Statement: The one-call center captures the following information, at a minimum, on a locate request: the caller's name and phone number; the excavator's/company's name, address and phone numbers; the specific location of the excavation; the start date and time of the excavation; and the description of the excavation activity.

Practice Description: A locate request is a communication between an excavator and one-call center personnel in which a request for locating underground facilities is processed. In addition to the minimum information required in the practice statement (above), the locate request should include any information, if available, that will help to establish the specific location of the excavation site. This additional information could include, for example:

- A. More detailed information to help determine the specific location of the excavation. Such information may include:
 - 1. City
 - 2. County/Parish/Township
 - 3. State
 - 4. Street address
 - 5. Street name
 - 6. Length and direction of the excavation and the nearest adjacent cross streets (needed to bound area of excavation or extended excavation)
 - 7. Subdivision and lot number (for new development)
 - 8. Latitude/Longitude: Latitude-longitude coordinate(s) or specific address of the dig site may be done automatically by the GIS subsystem or determined by computer assisted customer service representative. The dig site can be a point, and area or box, or a polygon. For a spatial rectangle (maximum/minimum latitude/longitude), the dig site must be wholly within the included area.
 - 9. Highway mile markers
 - 10. Railroad mileposts
 - 11. General directions/instructions
 - 12. Map grids
 - 13. Distance to nearest cross-street
 - 14. Any other pertinent references to help establish the location of the dig site
- B. The intended start date and time of the excavation (i.e., the date excavation is actually expected to begin, which may be later than when excavation can legally begin based on the ticket date).
- C. Type of the excavation activity (e.g., boring, blasting, trenching, etc.)

- D. Who the excavation work is being done for
- E. What is the purpose of the work (i.e., what will be installed and/or built)
- F. Additional remarks

References:

- C “Model One-Call For The 20th and 21st Century,” AT&T.
- C Existing operating practices from various states’ one-call centers.
- C 49CFR Part 198.

17. Practices to Reduce Over-Notifications

Practice Statement: The one-call center employs practices designed specifically to reduce the number of notices transmitted to facility owners/operators, in which the reported excavation site is outside the owner’s/operator’s desired area of notification.

Practice Description: The one-call center employs technology that allows the facility owner/operator to determine its desired area of notification by either polygons or grids. To reduce over-notifications, the technology should:

- C enable the call center to define the proposed excavation site buffer to within approximately 800 feet; and
- C provide the facility owner/operator the ability to identify its desired area of notification to within approximately 100 feet.

References:

- C “Model One-Call For The 20th and 21st Century,” AT&T.
- C Existing operating practices from various states’ one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

18. Disaster Recovery

Practice Statement: A one-call center develops, implements, and maintains an effective disaster recovery plan enabling the one-call function to continue in the event of a disaster.

Practice Description: The one-call center develops and implements an effective disaster recovery plan enabling it to continue operations in the aftermath of a disaster affecting the facility. Excavators and underground facility owners/operators outside of the area affected by the disaster can continue to conduct business with minimum to no delays in the services provided by the one-call center. The disaster recovery plan makes provisions for the one-call center to process emergency locate requests for the areas affected by the disaster.

The one-call center (the primary center) has a backup arrangement with another facility at a remote location (the secondary center). This arrangement includes:

- Telecommunications - alternate routing schedules are in place, ready to be activated within minutes of the primary centers' failure.
- Software and Hardware - the secondary center has compatible hardware with the primary center. The secondary center always has a copy of the primary's current software.
- Database - the secondary center receives the primary center's database including locate requests on a regular basis, preferably real-time.
- Staffing - a portion of the secondary center's staff is cross-trained for the primary center's operation at all times.
- Simulated Emergency Testing - At least once a year, on a random basis, the disaster recovery plan is implemented to verify that it is operational.

References:

- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.

19. Remote User Interface

Practice Statement: The one-call center provides users a means of direct, electronic entry of locate requests that maintains comparable ticket quality to an operator-assisted entry.

Practice Description: The one-call center has interactive data communications sufficient to permit remote data entry for members and excavators. The remote interface validates the input information and allows the user to make corrections if necessary. This correction is accomplished by referencing the same geographic database used at the one-call center when taking a voiced-in request. This process ensures that the ticket quality is maintained for all tickets.

References:

- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.
- C NTSB Safety Study (NTSB/SS-97/01; PB97-917003).

20. Accept Multiple Reference Points for Locate Requests

Practice Statement: The one-call center is able to accept multiple types of points of reference to define the exact location of an excavation site (i.e., latitude/longitude, highway/railroad/pipeline mile markers, address, street and cross-street, etc.).

Practice Description: The one-call center's locate request taking processes and computer system are designed to accept and process multiple types of reference points used by callers to (1) describe the location of their work and (2) define the excavation site. Examples of different types of reference points include: highway mile markers, railroad mileposts, valid address or street-cross street, latitude/longitude, township-range-section, city, county, political and mail address (zip code) boundaries, etc.

All stakeholders involved in the one-call process receive a corresponding benefit when the call center is able to define the excavation site as specifically as possible. The facility operator's job of determining the existence of a potential conflict is expedited, field personnel can find and mark the affected area much easier, and the excavator receives timely markings covering the area of excavation. Standardizing on a limited set of criteria reduces the flexibility of the system to serve the excavator and facility owner/operator. The one-call center invests in systems and processes that permit inclusion of a variety of types of reference points in defining the excavation site. The one-call center takes steps to link these reference points to the database used to register the facility operator's desired area of notification, thereby assisting in reducing over-notification.

References:

- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.

21. One-Call Center Security

Practice Statement: The one-call center provides appropriate physical and systems security, fire protection and electrical protection to protect the one-call center and its critical components.

Practice Description: The one-call center needs protection from natural disasters and other threats. Since the one-call center is a critical link in the communication chain between the excavating community and facilities, it is important that the one-call center does whatever it can to provide adequate security, taking into account that it may well need to be operational in times of natural disasters or in the face of other threats. Security components could include:

- C Physical security for the building and its employees through locked operations areas, lighting, employee key cards, guard patrols.
- C Physical security for critical systems components. This may include locating the facilities in locked enclosures and restricting access to necessary personnel.

- C General fire protection for the one-call center personnel and property.
- C Specialized fire protection for critical systems components.
- C Specialized theft protection for critical systems components.
- C Telephone demarcation points in a protected area within the One-Call Center.
- C Passwords and protections to limit access to computers and other systems.
- C Offsite storage of duplicate data base and necessary system software.

Reference: Existing operating practices from various states' one-call centers.

22. Hardware Designed to Tolerate a Single Point of Failure

Practice Statement: The one-call center uses fault tolerant hardware for its critical path operations, such as ticket taking, database access, and ticket delivery.

Practice Description: A fault tolerant system can withstand any single hardware malfunction without any interruption or degradation of service. These systems have the ability to identify the malfunctioning hardware component and permit its replacement while remaining online and processing its normal applications. These fault tolerant systems maximize the probability that the call center will be able to properly process an excavation request in the event of a failure or malfunction.

References:

- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.

23. One-Call Quality Standards

Practice Statement: The one-call center establishes performance standards for the operation of the center for the purpose of promoting accuracy, cost effectiveness and efficiency.

Practice Description:

- A. Customer Quality of Service Performance Measurements – It is best practice in the one-call center industry to monitor the quality of service provided to the customer calling the center. Key measurements include:

1. Speed of Answer

Process – Most call centers route incoming calls through an ACD (automatic call distributor) either via an on-premise PBX or a Centrex at the telephone company’s central office. Both of these devices provide reports that identify, on the average, how long a caller had to wait before they were answered. This measurement is called average speed of answer (ASA) and is normally captured on a half hourly basis and accumulated for the day.

Service Level – An objective service level should be set based on customer satisfaction and economics. An ASA objective of 30 seconds or less is recommended.

2. Abandoned Calls

Process – The PBX or Centrex also provides this data. It will normally identify the number of calls abandoned and how long the callers waited before they hung up.

Service Level – An objective service level should be set based on percentage of calls. An abandonment rate of less than 5% by callers that waited more than 60 seconds is a reasonable objective.

3. Busy Signals

Process – The one-call center is equipped with sufficient incoming lines to minimize busy signals.

Service Level – The performance level for busy signals received by callers into the one-call center does not exceed 1% of the total incoming call volume.

4. Customer Satisfaction

Process - A fundamental principal in measuring quality is that “the customer defines quality.” Periodic customer satisfaction surveys of callers are conducted.

Service Level – An objective service level is set based on percentage of caller’s responses. An objective of 99% customer satisfaction is recommended.

B. Locate Request Content

The one-call center has in place a quality of service plan which includes measurements of accuracy, productivity, and defects in locate request tickets.

C. Relational Database Quality and System Functionality

The geographic, relational database and the system that uses it confirms the hierarchical relationship between the street address, street, municipality, county and state.

D. Locate Request Delivery

The one-call center establishes the following minimum criteria for quality of locate request delivery. Transmission audit reports are sent to receiving locations daily.

1. Average emergency ticket transmission time (< 5 minutes)
2. Average short notice ticket transmission time (< 15 minutes)
3. Average normal ticket transmission time (< 30 minutes)
4. The ticket information should be transmitted in an electronic data format that allows the receiving equipment to parse/extract the data.

E. Ratio of Incoming Locate Requests to Outgoing Ticket Transmission

The one-call center monitors the ratio of incoming locate requests to outgoing ticket transmissions. This data assists in evaluating the center's marketing, education, mapping, budgeting, and cost performance.

References:

- C One Call Systems International (OCSI) Voluntary Recognition Program.
- C "Model One-Call For The 20th and 21st Century," AT&T.
- C Existing operating practices from various states' one-call centers.

3.6 MEASURING IMPROVEMENTS

The following items describe how the DOT might measure improvements in damage prevention, public safety, and non-interruption of essential services resulting from the implementation of these best practices. The measurements include but are not limited to improvements in:

- call volume;
- volume of one-call center membership;
- public awareness of damage prevention;
- the number of public education programs;
- marketing/public relations efforts for damage prevention awareness;
- state one-call legislation;
- technology used for locate request input and delivery methods, mapping systems, and communication capabilities;
- compliance programs;
- the number of one-call centers offering extended hours;
- the number of damage incidents per number of locate requests;

- the percentage of “no notification” damages; and
- the number of exemptions from one-call participation.

The DOT could monitor, for example, the NTSB incident reports, FCC common carrier damage reports, RSPA annual incident reports, and the OCSI annual report in order to determine the improvements resulting from implementing these best practices.

3.7 PATH FORWARD

This document should be a living document in that the completion of the charge given to the Task Team does not end the project. It only begins the evolution to even better policies and procedures for more effective damage prevention.

Because damage prevention is an ongoing process, it is imperative that the Task Team remains intact for the purpose of reviewing, identifying and evaluating changes and additions to the methods of operating and managing one-call centers. This document should be reviewed at least on an annual basis by the Task Team.

There were a number of issues that were considered by the Team, but were left unaddressed because of the lack of universal acceptance. These appear to have potential merit. These included but are not limited to:

- positive response,
- broad-based education, and
- Internet tools.

True success of this Task Team’s efforts should not be measured by this Report but by the universal acceptance of these practices and the resulting reduction of damages to underground facilities.

The One-Call Task Team discussed a practice, “Positive Response to Excavator; No Negative Response” that was previously referred to the Linking Team with the recommendation that other task teams evaluate. The Linking Team asked the One-Call Task Team to reconsider the need for inclusion of this item as a best practice. Since several states currently have requirements for positive response, the Task Team decided that the item was worthy of further consideration.

3.8 ACKNOWLEDGMENTS

The One-Call Task Team asked that the following acknowledgments be included in its chapter:

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- all constituent stakeholders for their participation and input.