The Role of the Damage Prevention Specialist

Executive Summary

The ground disturbance lifecycle in North America is well structured at the front end through planning, notification, and utility owner response. However, once locate information is delivered to the field, there is no consistent framework governing how that information is verified, preserved, and applied during execution. This gap exists at the point where risk is actively managed and where most damage events occur.

The current model relies on temporary surface markings to communicate critical information. As conditions change, these markings degrade or are removed, while the status of the locate may still be considered valid. This creates a disconnect between system status and field reality. The typical response is to request remarking, which restores visibility but does not maintain control, resulting in repeated work, increased system demand, and continued exposure to risk.

At the same time, information from multiple sources converges in the field. Public locates, Subsurface Utility Engineering where performed, and private locating efforts each contribute to the understanding of site conditions. These inputs are not consistently integrated, and there is no clearly defined role responsible for managing that information during the operational phase of ground disturbance.

The Damage Prevention Specialist addresses this gap.

The role is defined by function, not by company type or technology. It includes the investigation and identification of privately owned buried utility infrastructure, verification of public locate information where required, and the coordination and interpretation of all available data during execution. The Damage Prevention Specialist manages field conditions in real time by identifying gaps, preserving field intelligence, and supporting informed decision-making.

This function already exists within the industry. Experienced damage prevention speci have been performing these tasks for decades, most commonly operating as private locators, but without a consistent framework defining how this work should be applied.

The introduction of a structured operational function provides measurable benefits to the existing system. Aligning locate requests with construction sequencing improves locate quality and reduces the need for large, undefined tickets, while preserving field intelligence reduces reliance on repeated remarking and supports more consistent outcomes.

NAPUA defines this operational phase and the role responsible for managing it, ensuring that the information produced by existing systems is carried forward and applied effectively where it matters most, in the field during execution. By defining the function of the Damage Prevention Specialist and establishing a consistent approach to managing risk, the ground disturbance lifecycle becomes complete.

The Role of the Damage Prevention Specialist

1. INTRODUCTION

The North American Private Utility Association was not created in a boardroom. It came from decades of field experience where the same gap was encountered over and over again, regardless of the project, the client, or the jurisdiction. Our board is composed of Damage Prevention Specialists who have each spent more than four decades working in this industry. Long before the term Damage Prevention Specialist was ever used, we were already filling that gap to keep our clients safe.

On site, that meant going beyond the locate. It meant verifying what had been marked, identifying what had not been marked, and making timely decisions before ground disturbance began. In many cases, this resembled what would now be described as tailgate Subsurface Utility Engineering investigations. It was not formalized, but it was necessary because the information provided to the field was not sufficient on its own to manage risk during execution.

That experience is not unique. It exists across the private locate and Subsurface Utility Engineering communities. What has been missing is structure around that function. NAPUA exists to bring that structure forward and define how risk is managed in the operational phase of ground disturbance.

The industry has made significant progress over the past two decades. One Call systems have become the central coordination point for notification and utility owner response. Subsurface Utility Engineering has established a framework for reducing uncertainty during the design phase where it is applied. These are critical components of damage prevention and have improved safety across North America.

However, despite these advancements, the DIRT data continues to show that damage rates have remained relatively consistent and are not materially declining. The reason is not a lack of awareness or effort. It is that the damage prevention lifecycle is incomplete.

The current system is highly structured at the front end. Notification is defined. Responsibilities are clear. Processes are documented. Once the locate is delivered and the marks are placed on the ground, the process transitions into field execution where conditions begin to change immediately. Paint markings degrade, site activity alters visibility, and the responsibility for interpreting and acting on that information shifts to the party performing the work. In many cases, large scale tickets are submitted well in advance, and the markings are not acted on for weeks or even months.

At that point, structure is lost.

The industry has treated the locate as the endpoint. In practice, it is only the starting point. A valid ticket does not ensure that usable information still exists on the ground. Markings are temporary by nature. They fade, they are destroyed, and in some conditions they disappear quickly. When

that happens, the field loses its reference even though the system still considers the locate valid. Work often continues under that assumption, and that is where risk is introduced.

The typical response has been to request remarking. While remarking restores visibility for a short period of time, it reinforces a cycle that does not address the underlying issue. The utility owner has already identified the location of their infrastructure. From that point forward, the responsibility to preserve and manage that information shifts to the ground disturbance team. Repeated remarking increases ticket volume, adds pressure to locate service providers, and recreates information that already existed, rather than ensuring it is properly controlled throughout the life of the project.

Control in the field is the missing element, and this is where the Damage Prevention Specialist operates. The role extends well beyond locating. It is responsible for managing risk throughout the operational phase of ground disturbance. In practice, this includes verifying locate information, identifying gaps, coordinating with stakeholders, capturing and documenting both public and private locate markings within GPS-based systems, and supporting the ground disturbance team in making informed decisions. Whether formally recognized or not, this function has been performed by experienced practitioners for decades without a defined structure.

The challenge is broader than any single issue. It is not limited to marking visibility, ticket duration, or locate accuracy alone. It includes the loss of field intelligence over time, inconsistent interpretation of locate information, fragmented service delivery across the private locate industry, and the absence of a defined role responsible for managing these factors during execution.

This paper presents a practical framework to address that gap. It defines the operational phase of the damage prevention lifecycle, introduces the role of the Damage Prevention Specialist, and outlines how this function strengthens existing One Call systems without changing their mandate. It also addresses the fragmentation within the private locate industry and establishes a consistent expectation for what must be achieved to manage risk effectively during ground disturbance.

This is not a new system. It is the missing structure that allows the existing system to perform the way it was always intended to.

2. THE CURRENT SYSTEM AND ITS STRENGTHS

Damage prevention in North America is built on a foundation that has been developed and refined over decades. At the center of that foundation are One Call systems, supported by utility owners, regulators, and a network of stakeholders who contribute to making the system function. These organizations have created a consistent and reliable process for notification and response, ensuring that utility owners are informed of planned ground disturbance and have the opportunity to identify and mark their buried utility infrastructure.

This system works. It has significantly improved safety, reduced damages from where the industry once operated, and created a level of coordination that did not previously exist. The ability to submit a single request and trigger a response from multiple utility owners is one of the most effective advancements in damage prevention. It has standardized communication, clarified responsibilities, and established a clear starting point for safe work.

Subsurface Utility Engineering has also played an important role in advancing the industry, particularly during the design phase of projects. Where it is applied, it reduces uncertainty by integrating records, field investigation, and survey data to provide a higher level of confidence before construction begins. In complex environments, this has proven to be highly effective in identifying conflicts and supporting better planning.

Together, these components form a strong front end to the damage prevention lifecycle. Notification is defined. Responsibilities are understood. Information is delivered to the site. When these processes are followed, the system performs as intended.

However, the strength of the system is also where its boundary exists.

One Call systems are designed to notify and coordinate. Subsurface Utility Engineering is designed to reduce uncertainty during design where it is applied. Neither is structured to manage how information is preserved, interpreted, and applied once ground disturbance begins. That responsibility shifts to the field, where conditions are dynamic and decisions are made in real time.

This is not a flaw in the system. It reflects the scope of what it was designed to do.

Understanding this boundary is critical. The objective is not to expand the mandate of One Call systems or replace the role of Subsurface Utility Engineering. It is to recognize that once information is delivered to the site, a different type of control is required to ensure that information remains accurate, usable, and actionable throughout the life of the project.

In practice, the information available at a site often comes from multiple sources, including public locates delivered through the One Call system, Subsurface Utility Engineering where it has been performed, and private locating where privately owned buried utility infrastructure is present. Each of these contributes to the overall understanding of site conditions. However, they are not managed as a unified process once work moves into execution.

This is where the lifecycle continues, and where structure has not yet been clearly defined.

3. WHERE THE LIFECYCLE BREAKS DOWN

The ground disturbance lifecycle is commonly understood as a sequence of activities that begin with planning, moving through notification, and concluding with ground disturbance. The front end of this process is well defined. Responsibilities are clear, processes are documented, and the flow of information is structured. However, once work transitions from notification into execution, that structure begins to break down.

This is not due to a failure of the system. It is the result of a missing layer between information delivery and field application.

Up until this point, the system has relied on the ground disturbance professional to interpret locate markings and determine how to behave within the system, often without formal training or defined competency. This is where the private locate industry was born and how it evolved, as private locate contractors stepped in to help bridge that gap in at the point just before grond disturbance.

When a locate is completed, the markings on the ground represent verified information at a specific point in time. They reflect the best available understanding of buried utility infrastructure based on records, field detection, and utility owner input. At that moment, the system has performed its function as intended.

From that point forward, conditions begin to change. Markings degrade due to traffic, weather, and time. Site conditions evolve as construction progresses with access changes, and surfaces being removed or altered. In many cases, there is a delay between when markings are placed and when work actually begins, particularly on larger projects where ticket requests are submitted well in advance of construction activity.

As these changes occur, the information that was originally provided is no longer preserved in a reliable or usable form. The field begins to operate on memory, assumptions, or partial visibility. Despite this, the system may still indicate that the locate is valid. This creates a disconnect between system status and field reality.

A valid ticket does not guarantee that the information it represents is still available to the crew performing the work. The markings that once communicated that information may no longer be visible or may have been altered to the point where their accuracy cannot be confirmed. At this stage, the reliability of the information has degraded, but there is no defined mechanism within the lifecycle to manage that degradation.

At the same time, there is no clearly defined ownership of that information once it has been delivered. The utility owner has fulfilled its obligation by marking its infrastructure. The One Call system has fulfilled its role by coordinating notification and response. The locator has completed

the locate. What remains is the responsibility to manage that information in the field, yet that responsibility is not clearly defined within the lifecycle.

The typical response is to request a re-mark of the work area. While this restores visibility, it does not resolve the underlying issue. It resets the process rather than maintaining it. Each remark request reintroduces the same cycle of marking, degradation, and re-request, without establishing control over how information is retained or managed between those events.

This issue is further complicated by how work is actually performed in the field. Large, undefined ticket requests are often submitted well in advance of construction, while the work itself is carried out in phases over time. By the time ground disturbance occurs in a specific area, the markings may no longer reflect the original conditions under which they were placed. The system remains valid, but the information on the ground does not, or the work is carried out with invalid expired locates.

Variation in ticket validity across jurisdictions adds another layer of complexity. In some regions, tickets may be valid for 15 days, while others extend to 30, 60, or 90 days, and in some cases for the life of the project. These differing approaches are intended to address how long locate information can be relied upon, but they do not resolve the underlying issue. The reliability of the information is determined by what remains visible and verifiable in the field, not by the status of the ticket within the system.

This inconsistency extends to utility owner requirements in the field. Some utility owners allow markings to be refreshed by the contractor using their own paint. Others prohibit remarking but allow markings to remain valid if they can be substantiated, even where only partial evidence remains. Others require a full re-mark if the original markings are no longer visible. These differing requirements create uncertainty for the ground disturbance professional, who must navigate inconsistent expectations while conditions continue to change.

At the same time, information from multiple sources begins to converge in the field. Public locates, Subsurface Utility Engineering data where available, and private locating results all contribute to the understanding of site conditions. These sources may not align perfectly. Differences in methodology, timing, and scope can result in inconsistencies that must be interpreted before work can proceed safely. There is no clearly defined role responsible for managing that interpretation.

In addition, not all buried utility infrastructure is captured within the One Call system. Privately owned buried utility infrastructure, legacy installations, and undocumented services may not be represented in the information delivered to the site. This introduces another layer of uncertainty that must be identified and managed during execution.

In practice, these responsibilities are often assumed by the ground disturbance professional, who may not have the tools, training, or support required to reconcile these differences. In other

cases, they are informally managed by experienced field personnel who step in to verify conditions, communicate with stakeholders, and guide decisions. While this can be effective, it is not consistent, and it is not structured.

There is also no defined mechanism for preserving or transferring field intelligence as conditions evolve. Once markings are lost, the information they represented is often lost with them. There is no requirement to capture, document, or re-establish that information in a consistent way, which results in repeated reliance on remarking rather than maintaining control over known conditions. In practice, the ability to repeatedly request remarking reinforces this cycle, allowing information to be recreated rather than preserved and managed throughout the life of the project. This is where the lifecycle breaks down.

The system provides information, but it does not ensure that information remains usable. It defines responsibilities up to the point of delivery, but it does not define how those responsibilities continue once execution begins. As a result, the most critical phase of damage prevention, where decisions are made in real time and risk is actively managed, is left without a clearly defined framework.

This is not a gap in awareness. It is a gap in structure, and it is this gap that the Damage Prevention Specialist is positioned to address.

4. THE OPERATIONAL GAP ON PRIVATE PROPERTY

The breakdown identified in the previous section exists across all types of work, but it becomes more pronounced on private property where the structure of the system is less defined and the level of uncertainty is typically higher.

On public right of way, the One Call system provides a more complete picture of buried utility infrastructure because participation is mandated or strongly enforced in most jurisdictions, or the ground disturbance professional has also contacted utility owners who are not part of the One Call system. On private property, that same level of visibility does not exist. Privately owned buried utility infrastructure is often not captured within the One Call system, and available records may be incomplete, outdated, or entirely absent.

As a result, the information delivered through the standard notification process represents only a portion of the actual conditions present on site.

This creates an environment where ground disturbance professionals are required to make decisions based on incomplete information. Public locates may identify primary services up to the property boundary, meter, or building point of service entry, but the internal distribution of those services, along with additional privately owned systems, remains unverified unless further investigation is undertaken.

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In some cases, Subsurface Utility Engineering is performed during the design phase, which can significantly reduce this uncertainty. However, this is not consistently applied across all projects, particularly in smaller scale work or maintenance activities. Even where Subsurface Utility Engineering has been completed, conditions in the field may still differ from the design due to changes that occurred after the initial SUE investigation.

This leaves the operational phase as the point where remaining uncertainty must be addressed.

At the same time, the private locate industry that has developed to support this work remains fragmented. Different providers offer varying capabilities depending on their equipment, training, and business model. Some rely primarily on electromagnetic locating. Others incorporate ground penetrating radar or additional technologies. Some organizations integrate Subsurface Utility Engineering, private locating, and hydro excavation, while others focus on a single aspect of the process.

There is no consistent expectation for what constitutes a complete investigation in the operational phase when working on public or private property.

In practice, this means that two projects with similar risk profiles may receive very different levels of investigation depending on who is engaged and how the work is scoped. The tools available are not the issue. The issue is that the role responsible for ensuring that the appropriate level of investigation is carried out has not been clearly defined.

Without that structure, the burden of decision making falls back onto the ground disturbance professional, who must determine what additional steps are required to safely proceed. This often occurs without a clear understanding of what is available, what is necessary, or how different methods should be applied. The result is inconsistency.

Some projects receive a high level of scrutiny and verification, while others proceed with minimal investigation beyond the initial locate. The difference is not driven by risk alone, but by the presence or absence of experience, awareness, and guidance in the field. This is the operational gap across both public and private property.

It is not defined by a lack of tools, technology, or capability. It is defined by the absence of a consistent function responsible for managing uncertainty, integrating information from multiple sources, and ensuring that appropriate steps are taken before and during ground disturbance.

This is where the Damage Prevention Specialist becomes essential, not as a replacement for existing services, but as the role that ensures those services are applied effectively and in the correct sequence to manage risk.

5. THE DAMAGE PREVENTION SPECIALIST (DPS)

The Damage Prevention Specialist operates within the operational phase of the ground disturbance lifecycle, where information is no longer static and conditions must be verified, interpreted, and managed in real time. This role is not defined by a specific company type, service offering, or technology. It is defined by function. At its core, the Damage Prevention Specialist performs two critical roles.

The first is the investigation and identification of buried utility infrastructure that is not captured or fully defined through the standard One Call / 811 notification process. This includes privately owned buried utility infrastructure on private property, as well as verification of public utility locates where required. Depending on the conditions of the site, this may involve electromagnetic locating, ground penetrating radar, acoustic methods, vacuum excavation, or a combination of these approaches. The tools used may vary, but the objective remains the same, which is to reduce uncertainty and establish a reliable understanding of what exists below ground.

The second role is to act as the central point of coordination for all locate information throughout the operational phase of the project. In practice, this means managing the integration of public locates, Subsurface Utility Engineering data where available, and private locating results, and ensuring that this information is consistent, current, and usable in the field. The Damage Prevention Specialist becomes responsible for verifying markings, identifying discrepancies, coordinating with utility owners and locate service providers, and supporting the ground disturbance team in making informed decisions.

This is often described as the quarterback function.

The Damage Prevention Specialist is not replacing existing roles. Public locators, utility owners, and Subsurface Utility Engineering providers each perform defined and critical functions within the lifecycle. The Damage Prevention Specialist ensures that the information produced by those functions is properly understood, preserved, and applied during execution.

This includes capturing and documenting locate information in a way that allows it to be re-established as conditions change. Field markings are temporary by nature, but the information they represent does not need to be. Through measurement, GPS capture, and documentation, the Damage Prevention Specialist ensures that verified information is retained and can be transferred across crews, phases, and time.

The role also provides a direct line of communication between the field and the system. When discrepancies are identified, such as potential mismarks, missing infrastructure, or conflicting information between sources, the Damage Prevention Specialist is equipped to engage with public locators and utility owners to resolve those issues before ground disturbance proceeds. This reduces reliance on assumptions and minimizes the likelihood of reactive decisions being made under pressure.

In addition, the Damage Prevention Specialist plays a key role in how work is scoped and executed. By coordinating One Call / 811 locate requests and aligning them with actual construction sequencing, large and undefined ticket requests can be broken into controlled work zones. This improves the quality of locates, reduces pressure on field locators, and ensures that the information provided is relevant to the work being performed at the time.

All of these functions exist today in various forms across the industry. Experienced practitioners have been performing this role for decades, often without formal recognition or structure. The difference is that it has not been consistently defined, and it is not applied uniformly across projects.

NAPUA does not define who performs the role. It defines what must be achieved.

Whether the Damage Prevention Specialist is a private locate contractor, a Subsurface Utility Engineering provider, and in-house locator for a contractor, or part of a larger integrated service offering is secondary. What matters is that the function is fulfilled. The role must ensure that all available information is verified, gaps are identified, field intelligence and marking is preserved, and risk is actively managed throughout the operational phase of ground disturbance.

When this function is in place, the lifecycle becomes continuous. Information is no longer delivered and then left unmanaged. It is carried forward, maintained, and applied correctly as conditions change.

This is the role of the Damage Prevention Specialist.

6. FRAGMENTATION OF THE PRIVATE LOCATE INDUSTRY

The private locate industry has evolved over time to address the very gaps identified in the previous sections. It did not develop from a single model or standard. It developed in response to field conditions, client needs, and the limitations of existing systems. As a result, it has grown into a diverse and capable, but highly fragmented, part of the industry.

This fragmentation is not the result of a lack of expertise. It reflects the wide range of conditions encountered in the field and the different approaches practitioners have taken to manage those conditions.

Some providers rely primarily on electromagnetic locating or only ground penetrating radar. Others incorporate ground penetrating radar, acoustic methods, or additional technologies to EM locating depending on the environment. Some organizations operate strictly within the scope of private locating, while others integrate Subsurface Utility Engineering into their services. There are firms that will only perform investigations under a formal Subsurface Utility Engineering framework and will not provide field locates unless that level of work is completed. Others focus

on rapid response and field-based sweeps or passive scans, without fully validating findings through records, site knowledge, or additional investigation methods.

There are also providers entering the space with limited experience, often equipped with basic locating tools but without a structured understanding of how to manage risk in complex environments. This is not a reflection of intent, but of an industry that has developed without a clearly defined framework, association, or consistent expectations. As a result, practitioners often learn through experience in the field, which leads to wide variability in how work is performed and how risk is managed.

In addition, some providers include vacuum excavation as part of their service offering, allowing them to verify conditions through exposure. Others do not offer vacuum excavation and instead rely on the ground disturbance professional to complete that step. Survey integration also varies, with some organizations providing full geospatial deliverables and others operating strictly within the field without producing mapped outputs.

None of these approaches are inherently incorrect. Each reflects a different way of addressing uncertainty based on available tools, training, and business model. However, the absence of a consistent framework means that the level of investigation applied to similar projects can vary significantly.

Two projects with comparable risk profiles may receive very different levels of investigation depending on who is engaged and how the work is scoped. In some cases, a comprehensive approach is taken that integrates multiple methods and verification techniques. In others, work proceeds with limited investigation beyond the initial locate.

The variability is not driven by risk alone. It is influenced by awareness, experience, project constraints, and the availability of services. Without a defined expectation for what must be achieved during the operational phase, the outcome is inconsistent.

This is where the distinction between tools and function becomes critical.

The industry has access to a wide range of technologies and methods capable of identifying and verifying buried utility infrastructure. The challenge is not the absence of capability. It is the absence of a defined function responsible for ensuring that those capabilities are applied appropriately to manage risk.

NAPUA does not attempt to standardize the tools used or prescribe a single method of investigation. It recognizes that conditions vary and that flexibility is required in how work is performed. Instead, it defines the expected outcome of the operational phase.

The requirement is not that a specific technology be used. The requirement is that all relevant buried utility infrastructure, whether public or private, is identified to a level appropriate for the

work being performed, that gaps in information are recognized and addressed, and that the work is evaluated and assigned a risk level based on site conditions, available information, and the limitations of the investigation. That risk classification should then inform how the work is carried out and suggest the level of verification required before and during ground disturbance.

The Damage Prevention Specialist is the role responsible for achieving that outcome. In doing so, the Damage Prevention Specialist provides the information, context, and risk-based guidance required to support decision making in the field. Ultimately, the ground disturbance professional and the project owner determine how the work will proceed and how to safely operate around identified or unverified buried utility infrastructure.

By defining the function rather than the method, NAPUA brings cohesion to a fragmented industry without limiting how practitioners operate. It establishes a consistent expectation across projects while allowing flexibility in how that expectation is met.

This is a critical step in moving from a collection of services to a structured approach to managing risk during ground disturbance.

7. MANAGING ONE CALL / 811 TICKET SCOPE THROUGH DPS INTEGRATION

One of the most consistent sources of strain on the One Call system is not the volume of work itself, but how that work is scoped and requested. Large, undefined ticket requests submitted well in advance of construction create conditions where locate information is either not used when it is fresh or must be recreated multiple times as the project progresses.

In many cases, entire sites are requested under a single ticket, even though the work will be carried out in phases over an extended period of time. By the time ground disturbance begins in a specific area, the original markings may no longer reflect the conditions under which they were placed. This leads to remark requests, repeated locate activity, and increased pressure on locate service providers and locators, while the underlying issue of information management remains unaddressed.

In some situations, large area ticket requests are not driven solely by construction sequencing, but by uncertainty. Where Subsurface Utility Engineering has not been performed, or where available records are limited, the One Call system is often used to broadly define site conditions for design verification or planning purposes. While this approach can provide some level of insight, it places additional demand on the system and does not replace the need for a more structured investigation.

NAPUA recognizes Subsurface Utility Engineering as the most effective method for reducing uncertainty during the design phase and strongly supports its use wherever practical. Where a comprehensive Subsurface Utility Engineering investigation has been completed, the level of uncertainty entering the operational phase is significantly reduced.

However, in practice, many projects proceed without this level of investigation due to cost, schedule, ignorance, or scope limitations. In these cases, the responsibility to manage remaining uncertainty shifts to the operational phase. The Damage Prevention Specialist does not replace Subsurface Utility Engineering. The role operates within the constraints of the information available, applying field-based investigation and verification methods to reduce risk as much as possible before and during ground disturbance. This is not a substitute for design phase investigation. It is a response to conditions where that level of investigation was not performed.

A Damage Prevention Specialist can support this process more effectively. Rather than relying on large-scale locate requests to understand site conditions, the Damage Prevention Specialist can perform targeted investigation and verification aligned with the actual scope of work. This provides the ground disturbance professional and project team with a clearer understanding of conditions without placing unnecessary demand on the One Call system.

When engaged early, the Damage Prevention Specialist can coordinate locate requests in alignment with actual construction sequencing. Rather than submitting large, undefined tickets, the work can be broken into controlled work zones that reflect how the project will be executed in the field. This allows locates to be performed closer to the time of use, improves the relevance of the information provided, and reduces the need for repeated remarking.

This approach does not reduce the amount of work being done. It improves how that work is distributed and applied.

By aligning ticket scope with execution, the quality of locates improves and the pressure placed on field locators is reduced. Locators are no longer required to cover large areas with uncertain timelines. Instead, they can focus on defined work zones where their efforts directly support active ground disturbance.

In practice, many private locate contractors operate with in-house coordination teams that manage 811 requests on behalf of their clients. These teams review the project scope, submit locate requests, and coordinate field crews to investigate privately owned buried utility infrastructure within the defined work area. As part of this process, private locators are often verifying public locate markings while identifying private infrastructure, particularly in situations where limited records are available.

When working without reliable records, the investigation must consider all detectable buried utility infrastructure to differentiate between public and private systems. Signal distortion, overlapping services, and incomplete information require a broader approach to interpretation. This is not a separate activity. It is part of understanding the full conditions on site.

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When private locate contractors operate in alignment with NAPUA's best practices, this process is structured and controlled. Locate requests are scoped appropriately, work is phased to match execution, and the practice of submitting large, undefined tickets is avoided.

The Damage Prevention Specialist also serves as a technical point of contact between the field and the system. When issues arise, such as potential mismarks, missed public utility lines, or conflicting information, the Damage Prevention Specialist is better equipped to engage with public locators and utility owners. Because the role includes verification and ongoing management of field conditions, discussions are based on documented observations rather than assumptions. This improves the efficiency and clarity of communication.

In addition, the Damage Prevention Specialist verifies public locate markings as part of the overall investigation process. This does not replace the responsibility of the utility owner or the locator. It provides an additional layer of due diligence that helps identify discrepancies before ground disturbance occurs. When issues are identified early, they can be addressed in a controlled manner rather than through reactive emergency requests.

This has a direct impact on system performance:

- Fewer large scale tickets
- Fewer repeated remark requests
- Fewer emergency locate calls
- More predictable workload for locate service providers

The cost associated with this additional level of control is not absorbed by the One Call system or the utility owner. It is carried by the ground disturbance professional or project owner as part of managing risk on the project. This aligns responsibility with the party that controls how and when the work is performed.

The result is a more efficient system, not by increasing resources, but by improving how information is managed and applied.

The Damage Prevention Specialist does not change the function of the One Call system. It allows that system to operate more effectively by ensuring that the information it provides is used correctly, at the right time, and in the right place.

8. PRESERVING FIELD INTELLIGENCE

At the point a locate is completed, the markings on the ground represent verified field intelligence. They reflect a combination of records, field detection, and utility owner input at a specific moment in time. That information has value based on skill and effort beyond the paint that represents it, yet the industry continues to treat the markings themselves as the primary deliverable. Paint is temporary. The information is not.

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As ground disturbance progresses, markings degrade due to traffic, weather, and site activity. In many cases, they are removed entirely as surfaces are disturbed or replaced. When this occurs, the information that was once clearly communicated becomes fragmented or lost. The field is then forced to rely on memory, partial markings, or repeated locate requests to regain visibility. This is not a failure of the locate. It is a failure to preserve the information.

The current model depends heavily on remarking to restore visibility or extend the validity of a locate ticket. While this may appear to maintain safety, it introduces a cycle of repeated work that does not improve control. Each remark recreates information that already existed, rather than ensuring that information is retained and actively managed throughout the life of the project.

Preserving field intelligence requires a different approach. Once locate information has been verified, it should be captured in a way that allows it to be re-established accurately as conditions change. This can include measurement to fixed reference points, GPS data collection, photographic documentation, and the integration of that information into a format that can be shared across teams and phases of work.

When this is done effectively, the reliance on temporary markings is reduced. The field is no longer dependent on whether paint is visible at a given moment. Instead, it operates with a documented and transferable understanding of site conditions. This approach also supports continuity.

Ground disturbance projects often involve multiple crews, shifts, and phases of work. Without a method of preserving field intelligence, each transition introduces the potential for information loss or misinterpretation. By capturing and maintaining verified data, the same understanding of conditions can be carried forward regardless of who is performing the work.

The Damage Prevention Specialist is responsible for managing this process. This includes capturing locate information at the time it is established, maintaining that information as conditions evolve, and ensuring that it can be re-applied accurately when required. It also includes recognizing the limitations of the information collected and communicating those limitations clearly to the ground disturbance team.

Preservation does not eliminate uncertainty. It makes uncertainty visible and manageable. This distinction is critical. When information is preserved, decisions in the field are based on known conditions and documented limitations, rather than assumptions or incomplete visibility. This reduces the likelihood of errors and supports more deliberate and controlled execution. The impact of this approach extends beyond the project itself.

When field intelligence is preserved, the need for repeated remarking is reduced. Locate requests are no longer driven by loss of visibility, but by actual changes in scope or conditions. This reduces unnecessary demand on the One Call system and allows resources to be focused where they are

needed most. More importantly, it shifts the industry away from a reactive model and toward a controlled one.

The objective is not to eliminate the use of markings. It is to ensure that the information those markings represent is retained, understood, and applied consistently throughout the ground disturbance lifecycle of the project.

This is a fundamental shift in how locate information is managed. It is also one of the most immediate opportunities to improve outcomes without requiring changes to legislation, systems, or existing roles.

9. SYSTEM-LEVEL BENEFITS TO ONE CALL

The introduction of a structured operational function within the ground disturbance lifecycle does not change the role of the One Call system. It strengthens the outcome of the work that the system initiates.

When the Damage Prevention Specialist is engaged and operating within a defined framework, the impact on system performance becomes measurable.

One of the most immediate effects is a reduction in repeated remark requests. When field intelligence is preserved and managed, the need to re-ticket the same work area due to loss of markings is significantly reduced. Locate requests are then driven by changes in scope or conditions, rather than by the loss of visibility. This leads to a more stable and predictable workload. In addition, better alignment between ticket scope and construction sequencing reduces the number of large, undefined requests. Work is broken into controlled zones, allowing locators to focus on active areas rather than covering entire sites with uncertain timelines. This improves the quality of locates and reduces the pressure placed on field resources.

Clarification requests also decrease. When locate information is verified, documented, and interpreted in the field by a qualified Damage Prevention Specialist, the need for follow-up communication to understand markings is reduced. This minimizes re-dispatches and improves overall efficiency in how information is applied.

Emergency locate activity is also indirectly affected. Emergency locates are dispatched in response to damage, loss of service, or immediate risk conditions. In many cases, these events occur when unexpected or unverified conditions are encountered during ground disturbance. When information is not preserved, interpreted correctly, or verified before excavation, the likelihood of these incidents increases. By identifying and addressing gaps in information earlier in the process, the Damage Prevention Specialist reduces the conditions that lead to damage events, which in turn reduces the need for emergency response. This contributes to a more stable operating environment.

Another benefit is improved communication between the field and the system. When issues such as potential mismarks or missing infrastructure are identified by a Damage Prevention Specialist, they are communicated with supporting documentation and context. This allows utility owners and locate service providers to respond more effectively, reducing ambiguity and improving resolution time. Over time, this also creates a more informed feedback loop.

Documented field observations provide insight into recurring issues, data gaps, and areas where improvements can be made. This information can support better coordination with utility owners and contribute to long-term system improvements, rather than relying solely on reactive responses after damages occur.

From a resource perspective, the system benefits from improved efficiency rather than increased capacity. Fewer repeated tickets, fewer emergency requests, and better scoped work reduce unnecessary demand. This allows existing resources to be applied more effectively, particularly in high-volume environments where delays and backlogs are common. It also improves confidence in the system.

When locate information is preserved, verified, and properly applied in the field, the likelihood of damage decreases. At the same time, incidents that do occur are more clearly understood, reducing the tendency to attribute failures to locate accuracy when they are the result of conditions in the field. The overall effect is a system that operates with greater consistency and predictability.

The One Call system remains the central coordination point for notification and response for publicly owned buried utility infrastructure. The addition of a structured operational function ensures that the information it provides is not only delivered, but carried forward and applied correctly throughout the ground disturbance lifecycle.

This is where the system realizes its full potential.

10. PROFESSIONAL ACCOUNTABILITY AND WORKFORCE DEVELOPMENT

The effectiveness of any framework within the ground disturbance lifecycle ultimately depends on the competency of the individuals applying it. While systems, processes, and technologies play an important role, it is the decisions made in the field that determine whether risk is properly managed.

At present, there is no clearly defined professional pathway for individuals operating in the operational phase of ground disturbance. The responsibilities associated with verifying locate information, identifying gaps, coordinating with stakeholders, and managing risk in real time are often assumed without formal recognition or consistent training requirements.

The Role of the Damage Prevention Specialist

In many cases, these responsibilities fall to ground disturbance professionals who are expected to interpret locate markings and make critical decisions without a structured understanding of how to manage uncertainty. In other cases, experienced practitioners within the private locate or Subsurface Utility Engineering space take on this role based on field experience rather than a defined standard. The result is variability in both competency and approach.

Some individuals develop a high level of expertise through years of experience, while others enter the field with limited training and are required to learn through exposure to real-world conditions. This creates inconsistency in how risk is evaluated, how information is interpreted, and how decisions are made during execution.

The Damage Prevention Specialist defines a function that can be developed into a recognized professional role. This does not require the creation of a new regulatory body or the imposition of certification requirements. It requires a clear definition of responsibilities, an understanding of the knowledge and skills required to perform those responsibilities, and a structured approach to training and development.

A Damage Prevention Specialist must be able to interpret information from multiple sources, understand the limitations of different locating methods, recognize conditions where additional investigation is required, and communicate risk effectively to the ground disturbance team. This requires a combination of technical knowledge, locating skills, field experience, and situational awareness that is not currently standardized across the industry.

NAPUA does not seek to replace or replicate existing technical locate training programs. The development of locating skills should remain with established training organizations such as Canadian Association of Pipeline and Utility Locating Contractors and National Utility Locating Contractors Association, along with other qualified training providers. NAPUA's role is to define how those skills are applied within the operational phase of ground disturbance, ensuring that technical capability is aligned with risk management and decision-making in the field. Establishing this role creates accountability.

When responsibility for managing information and risk during execution is clearly defined, expectations become consistent. Ground disturbance professionals are supported by individuals who are trained to interpret and verify conditions, rather than relying solely on assumptions or incomplete understanding.

This also creates a pathway for workforce development. As the role becomes more clearly defined, training programs can be aligned to support it. Individuals entering the industry can develop the skills required to operate effectively within the operational phase, rather than relying entirely on trial and error. Experienced practitioners can build on their knowledge within a structured framework that reflects how work is actually performed in the field. Over time, this leads to a more consistent and capable workforce and it also supports the broader objective of improving outcomes across the ground disturbance lifecycle. When the individuals responsible

for managing risk are equipped with the appropriate knowledge and tools, the variability currently seen across projects begins to decrease.

The introduction of the Damage Prevention Specialist is not simply about defining a role. It is about establishing accountability, supporting professional development, and creating a consistent approach to how risk is managed in the field.

This is a necessary step in moving from an experience-based industry to a structured and sustainable model.

11. DATA, MAPPING, AND LONG-TERM SYSTEM IMPROVEMENT

The information generated during the ground disturbance lifecycle does not need to be temporary. Each locate, each verification, and each field observation represents data that can contribute to a more accurate and reliable understanding of buried utility infrastructure over time.

At present, much of this information is lost once the work is completed. Markings degrade, field notes remain isolated, and observations made during excavation are not consistently captured or transferred. As a result, the same uncertainty is encountered repeatedly across projects, even in areas where work has already been performed. This is not a limitation of technology. It is a limitation of process.

When field intelligence is preserved through measurement, GPS data collection, and documentation, it creates an opportunity to build a more informed and consistent dataset over time. Verified locations, identified discrepancies, and documented conditions can all contribute to improving how buried utility infrastructure is understood at both the project and system level.

The role of the Damage Prevention Specialist is central to this process. By capturing and managing information during execution, the Damage Prevention Specialist creates a bridge between field activity and long-term data improvement. This includes recording verified locations, documenting deviations from expected conditions, and identifying areas where existing records or system information may be incomplete or inaccurate. This information has value beyond the immediate project.

When shared appropriately, it can support improved mapping, better coordination with utility owners, and more informed decision-making in future work. It also provides a foundation for identifying patterns, such as recurring discrepancies or areas where additional investigation may be required before ground disturbance. Over time, this contributes to a more accurate representation of buried utility infrastructure.

It is important to recognize that this process does not replace existing mapping or data management systems. It complements them and utility owners, One Call systems, and

engineering providers each maintain their own data structures and responsibilities. The information captured during ground disturbance provides an additional layer of verification that can enhance these systems when integrated effectively.

This supports accountability when field conditions are documented and preserved, decisions made during execution can be traced back to the information available at the time. This improves transparency and helps distinguish between issues related to data accuracy and those related to how work was performed.

The long-term benefit is a system that becomes more informed with each project. Rather than repeating the same cycle of uncertainty, the industry begins to accumulate knowledge that can be applied to future work. This does not require a centralized system or immediate standardization across all stakeholders. It begins with consistent practices in how information is captured and managed in the field and the Damage Prevention Specialist enables this shift.

By treating field intelligence as data rather than temporary markings, the operational phase becomes a source of continuous improvement rather than a repeated point of uncertainty.

12. IMPLEMENTATION FRAMEWORK

The introduction of a structured operational function within the ground disturbance lifecycle does not require a redesign of existing systems. It can be implemented within the current framework by aligning responsibilities, improving how information is managed, and integrating the role of the Damage Prevention Specialist into existing workflows.

Implementation begins at the project level, where ground disturbance professionals and project owners already make decisions regarding scope, risk, and how work is carried out. Integrating a Damage Prevention Specialist into this process ensures that these decisions are supported by verified information, structured investigation, and a clear understanding of risk. This approach can be applied across a wide range of projects, from small maintenance work to large-scale developments, without requiring changes to existing systems or mandates.

This does not require building a new workforce from the ground up. The industry already has experienced practitioners performing these functions in the field today, most commonly operating under the role of private locators. What is currently missing is not capability, but structure. By defining the function and establishing consistent expectations, these existing professionals can operate within a more cohesive and effective framework.

One of the most effective entry points for implementation is during project planning and pre-construction. By engaging a Damage Prevention Specialist early, locate requests can be aligned with construction sequencing, investigation can be scoped appropriately, and gaps in available information can be identified before work begins. This reduces the reliance on reactive measures and allows the project to proceed in a controlled and informed manner while maintaining the

existing One Call process. Locate requests continue to be submitted through the established system, and utility owners continue to respond as required, but the difference lies in how that information is managed once it is delivered.

Pilot programs provide a practical pathway for broader adoption by allowing One Call centers, utility owners, contractors, and private locate contractors to work together on selected projects. These pilots can focus on measurable outcomes such as reduced remark requests, improved accuracy of locate information in the field, and a reduction in damage-driven emergency response activity. Demonstrating these results in real-world conditions allows the value of this approach to be validated without requiring immediate large-scale change.

This approach also allows for regional flexibility, recognizing that different jurisdictions operate under varying legislative frameworks and operational constraints. The implementation of a Damage Prevention Specialist does not require uniform regulation and can be adapted to fit within local requirements while maintaining a consistent approach to managing risk during execution. The way a Damage Prevention Specialist operates in one province or state may involve different levels of risk management depending on regulatory requirements, project conditions, and available information.

Over time, as more projects adopt this model, expectations around how information is managed in the field become more consistent. This supports improved coordination between stakeholders and creates opportunities for further integration with training programs, mapping systems, and industry best practices.

Importantly, this framework aligns responsibility with control. The cost and effort associated with managing risk during ground disturbance remain with the ground disturbance professional and project owner, while the One Call system continues to provide notification and coordination, and utility owners continue to identify and mark their infrastructure. The Damage Prevention Specialist ensures that these inputs are brought together and applied effectively during execution, allowing the system to improve without shifting mandates or creating additional burden on existing stakeholders. Over time, this approach may reduce that burden as demand becomes more controlled and predictable.

Implementation does not require new legislation or new systems. It requires a clear definition of the operational phase, recognition of the role responsible for managing it, and a consistent approach to how information is verified and applied in the field. This is how the ground disturbance lifecycle is completed.

13. CONCLUSION

The ground disturbance lifecycle is well defined at the front end, but it has lacked structure at the point where risk is actively managed in the field. The introduction of the Damage Prevention Specialist completes that lifecycle by establishing a consistent approach to how information is

verified, preserved, and applied during execution. This is not a new concept. It reflects how experienced practitioners have been operating in the field for decades.

Members of NAPUA's founding group bring over four decades of experience in private locating and damage prevention. For more than twenty years, these practices have been applied in the field by verifying locate information, identifying gaps, coordinating with stakeholders, and managing risk throughout the operational phase of ground disturbance. Clients who have operated under this approach have consistently benefited from improved outcomes, not because of new technology or additional regulation, but because information was controlled, understood, and applied correctly in the field.

What has been missing is structure around these practices. The methods that have proven effective have not been consistently defined or applied across the industry, resulting in variability in both quality and risk management from one project to the next. NAPUA was established to address this gap by defining the operational phase of the ground disturbance lifecycle and bringing clarity to the role responsible for managing it.

The role of NAPUA is to ensure that the information produced by these functions is carried forward and applied effectively where it matters most, in the field during execution, within a domain that has historically been managed by experienced practitioners without formal structure.

By defining the function of the Damage Prevention Specialist, NAPUA provides a framework that supports consistency without limiting how work is performed. It aligns responsibility with control, supports informed decision-making, and creates a pathway for improving outcomes across the industry. This represents an opportunity to elevate the practice by bringing structure to what already exists, connecting roles that currently operate in isolation, and managing risk where it is encountered in real time.

This is how the ground disturbance lifecycle becomes complete.