

## Introduction

The National Institute of Standards and Technology (NIST) facilitated the development of this Crime Scene Investigation Process Map through a collaboration between the NIST Forensic Science Research Program and the NIST administered Organization of Scientific Area Committees (OSAC) for Forensic Sciences (specifically OSAC's Crime Scene Investigation and Reconstruction Subcommittee).

This Crime Scene Investigation Process Map (Current Practice) captures details about the various procedures, methods, and decision points most frequently encountered in crime scene investigation from a national perspective and **is intended to reflect current practices**. The discipline requires investigators to make many decisions that can impact the quality and accuracy of results. The Crime Scene Investigation Process Map can benefit the discipline by providing a detailed perspective into the various components and decision points in the investigative process.

Process mapping is the visual representation of critical steps and decision points of a process. Components of the process are deconstructed, placed into specific shapes within a flowchart and connected by one-way arrows to indicate directionality regarding decisions as well as progression throughout the overall process. The shape of each box assists the reader by representing a specific type of activity.

This process map captures the **diverse** practices of multiple laboratories, with the goal of allowing an investigator to find their process represented in the map. To ensure this, the mapping team avoided creating a map of what **should** be done (e.g., best practices) and instead attempted to represent all reasonable variations of crime scene activities **currently performed** by investigators. For this reason, it is important to state that the OSAC Crime Scene Investigation and Reconstruction Subcommittee does not necessarily support or endorse (as best practices) all of the different steps and paths depicted in this process map.

This map is not intended to be a step-by-step instruction manual outlining minutia, nor is it intended to be so broad that it lacks utility. Rather, judgments were made by the process mapping team as to which steps should be combined and which steps should be divided further. Certain processes represented in the map have a required sequence while other components may vary by investigator, or agency. Processes and decisions may also be dictated by agency policy or law.

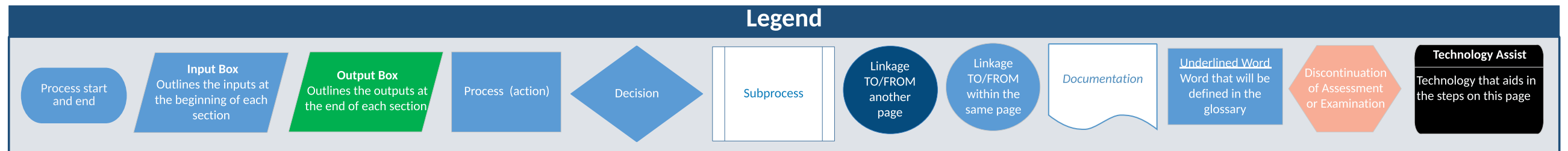
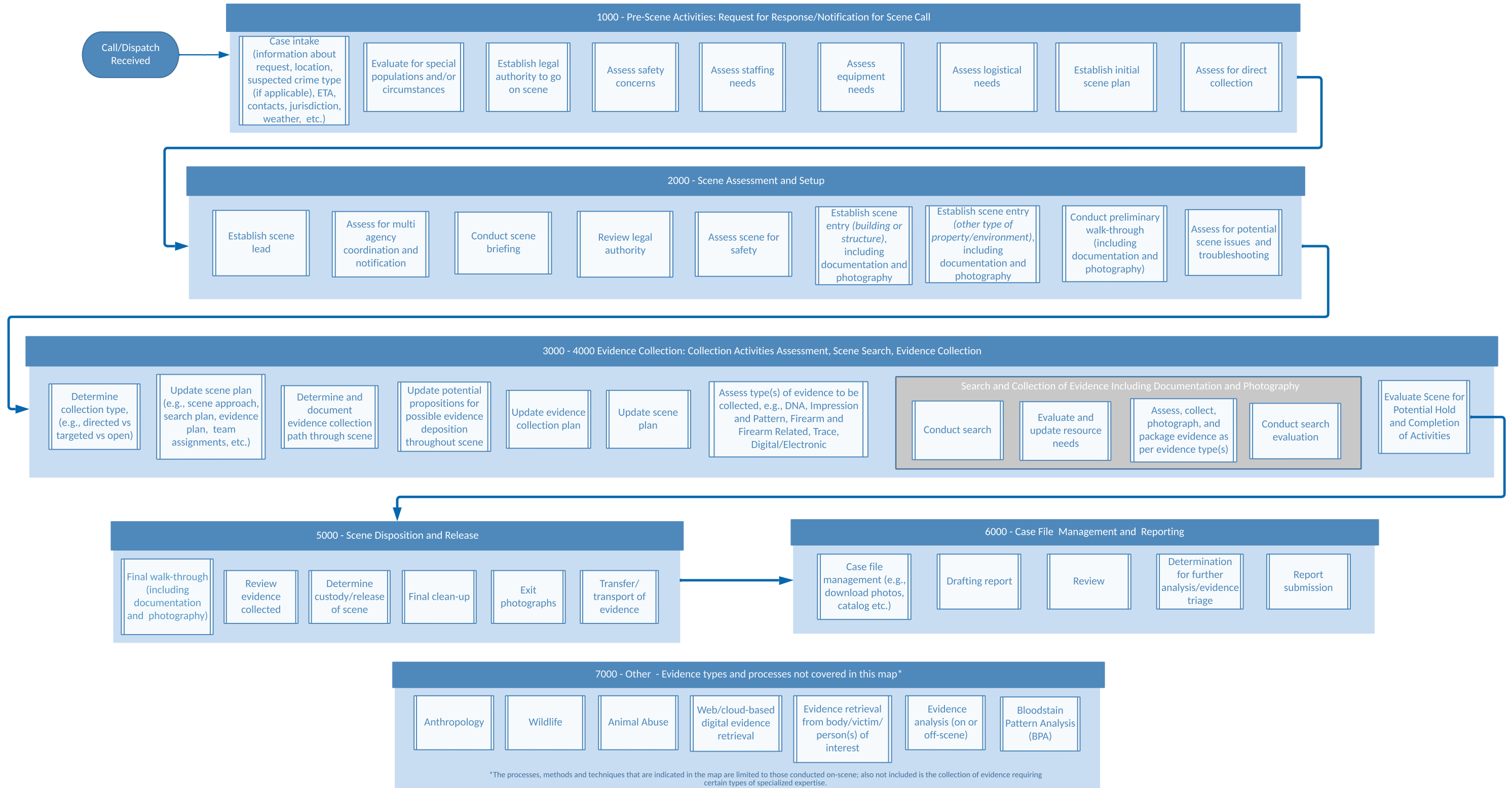
### **Process Map Applications:**

The Crime Scene Investigation Process Map is intended to be used to help improve efficiencies while reducing errors, highlight gaps where further research or standardization would be beneficial, and assist with training new investigators. It may also be used to develop specific investigative policies and identify best practices.

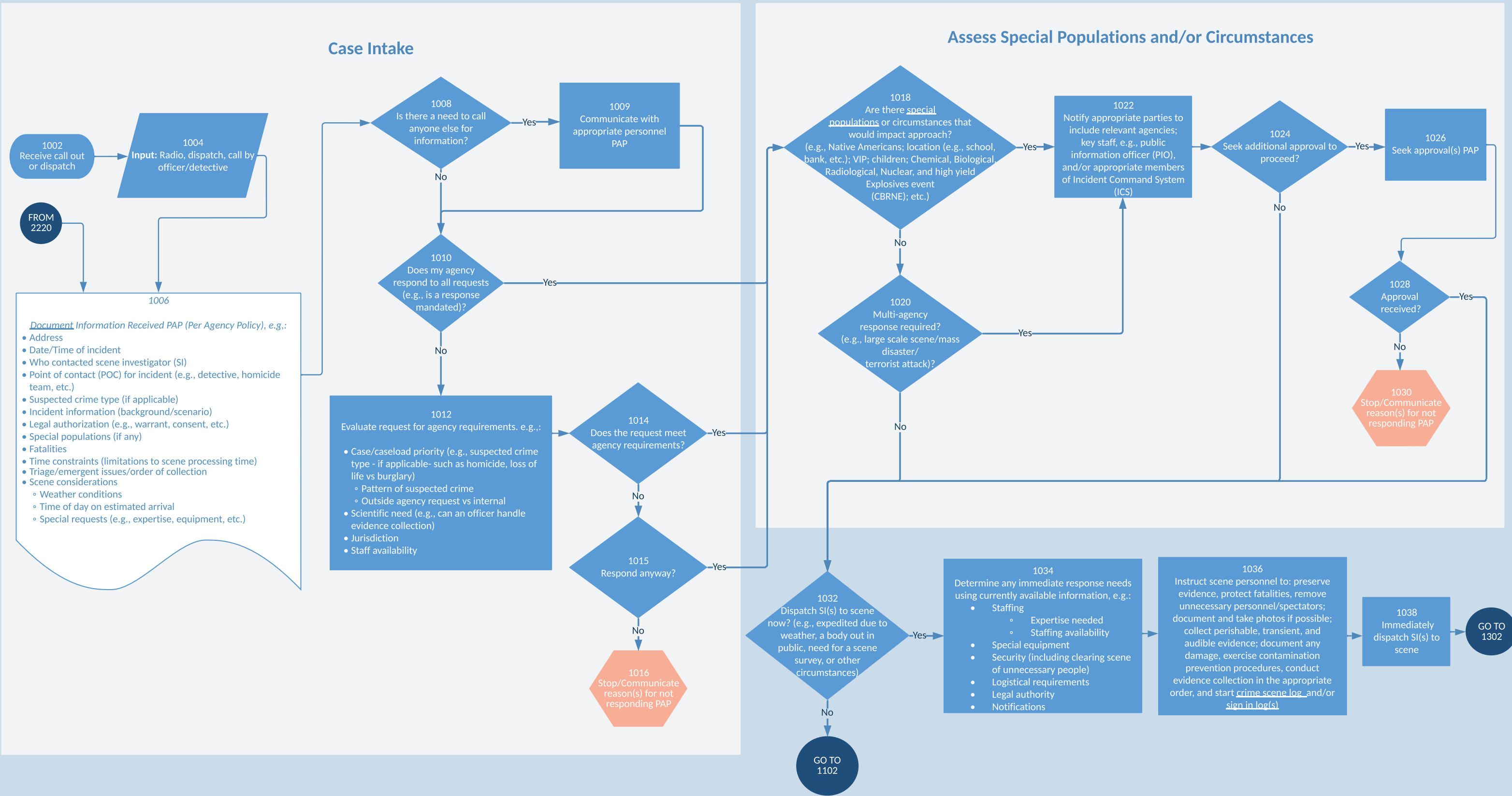
### **Scope of the Crime Scene Investigation Process Map:**

The scope of the Crime Scene Investigation map is limited to core processes within the discipline of crime scene investigation such as the search, collection, and packaging of evidence. Several topics are omitted from this map including, for example, post-scene evidence analysis and the retrieval of cloud-based evidence. These and other topics may subsequently be addressed by the process mapping team, an individual entity, or a standardization committee at a later time.

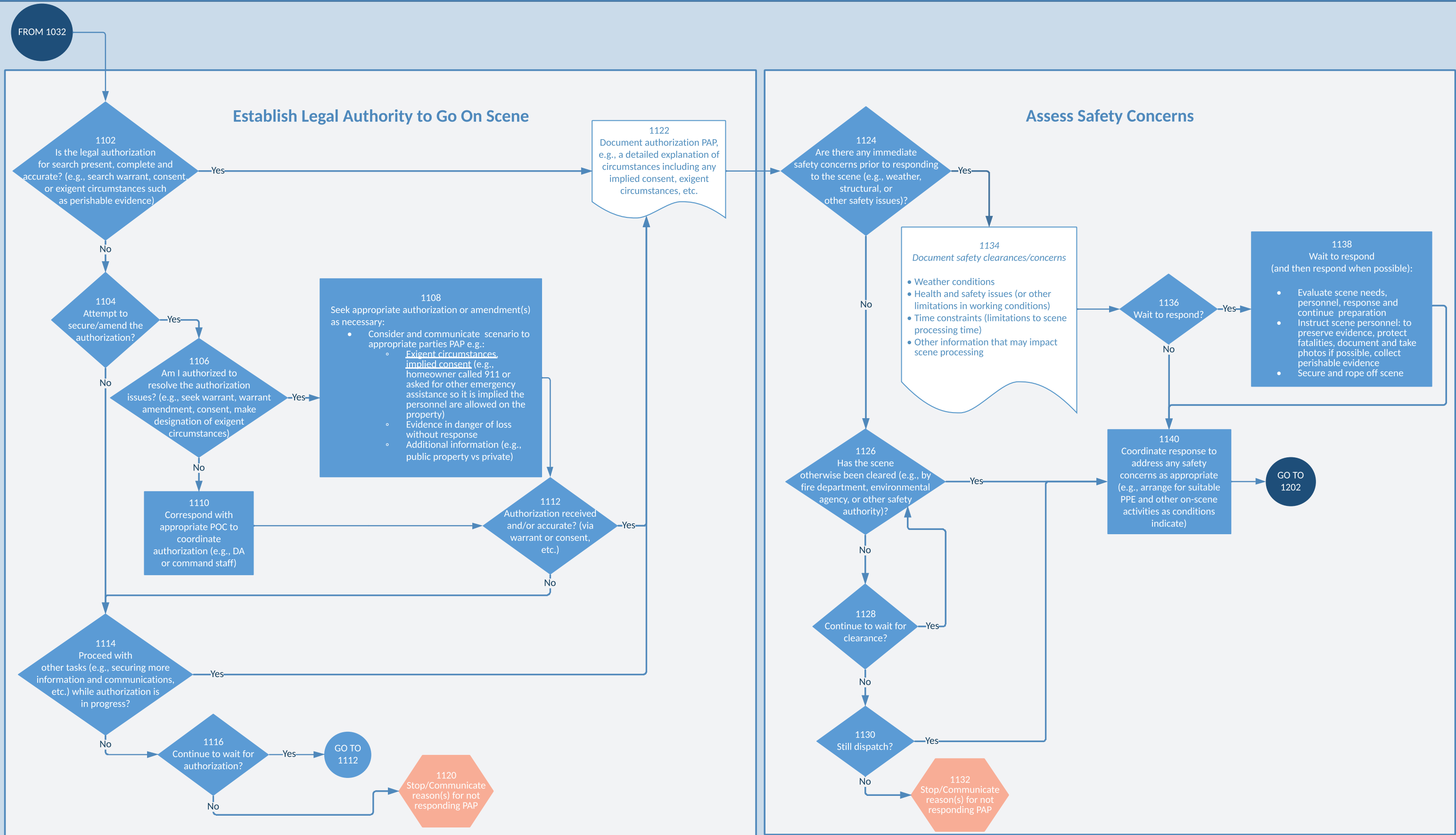




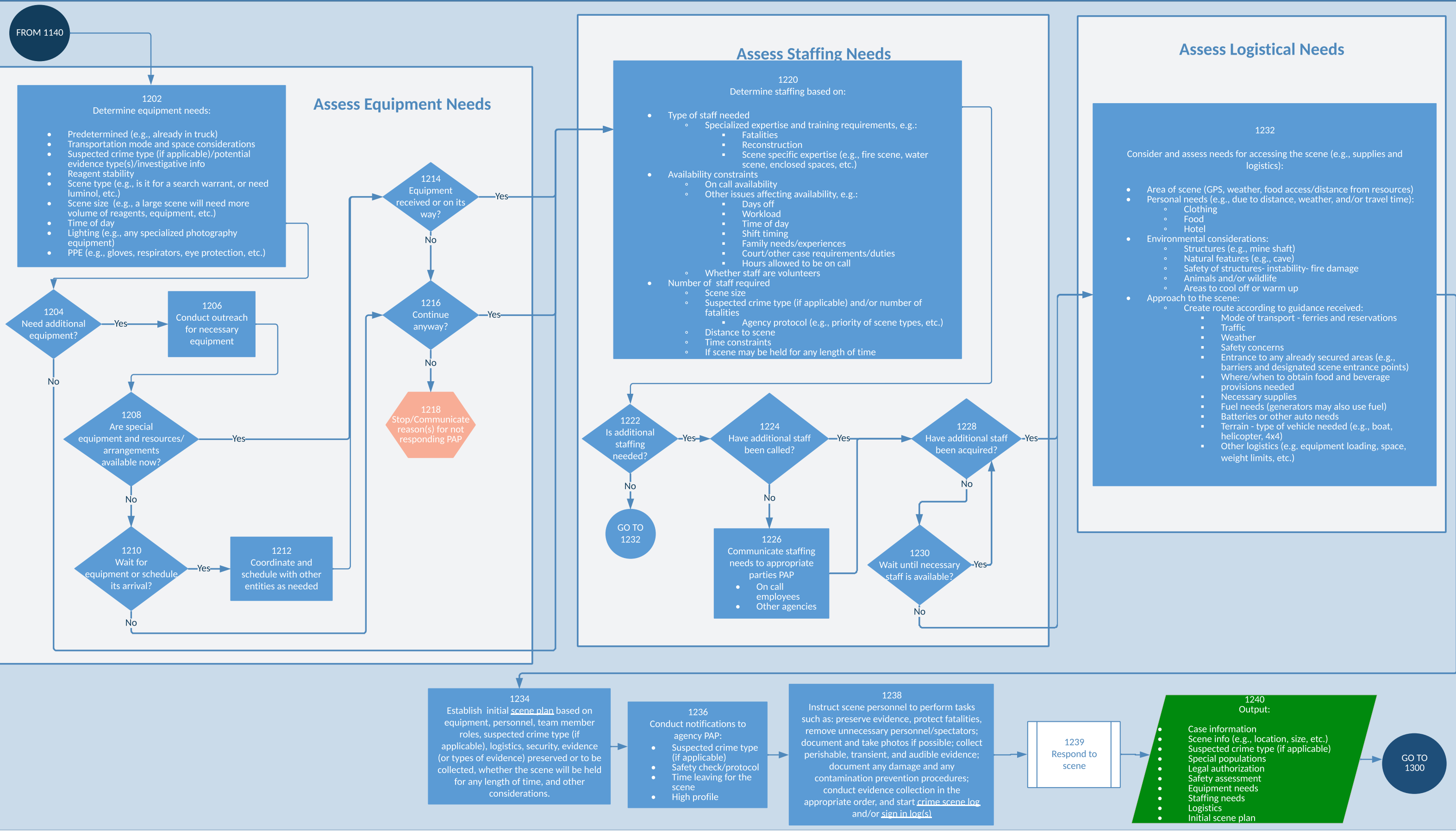
1000 - Pre-Scene Activities (1 of 3)



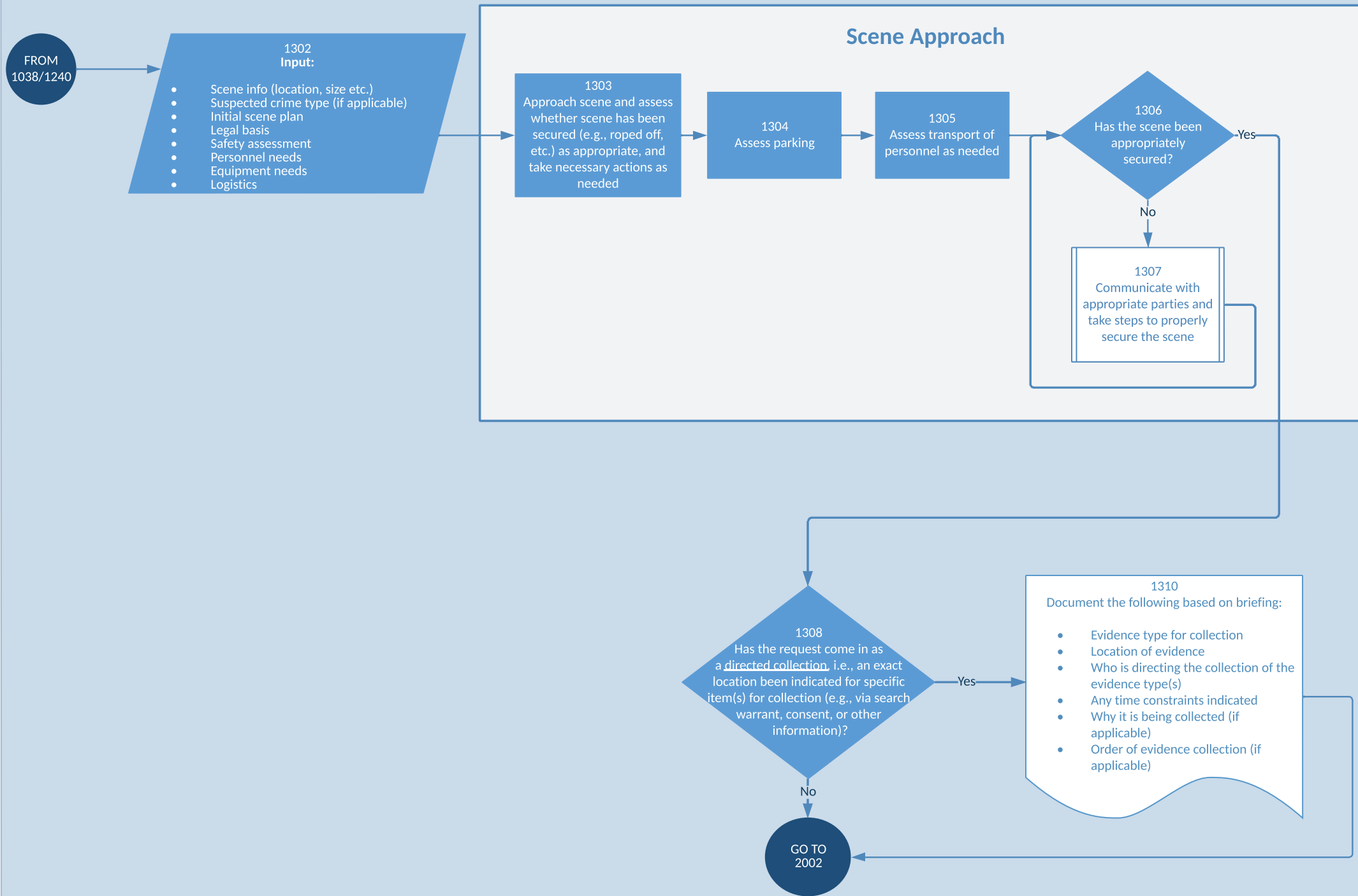
1100- Pre-Scene Activities (2 of 3)



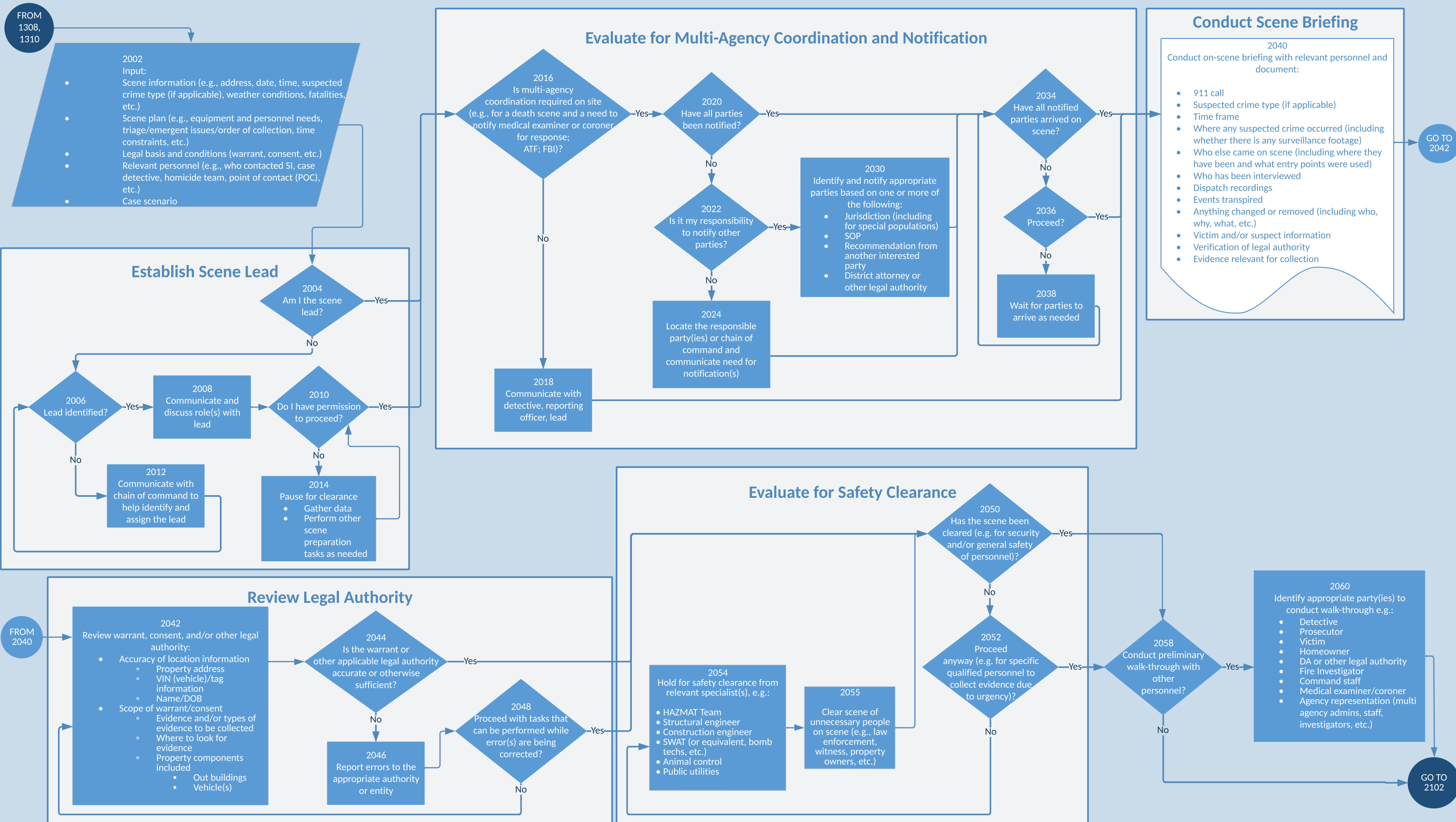
1200 - Pre-Scene Activities (3 of 3)



1300 - On-Scene: Scene Approach

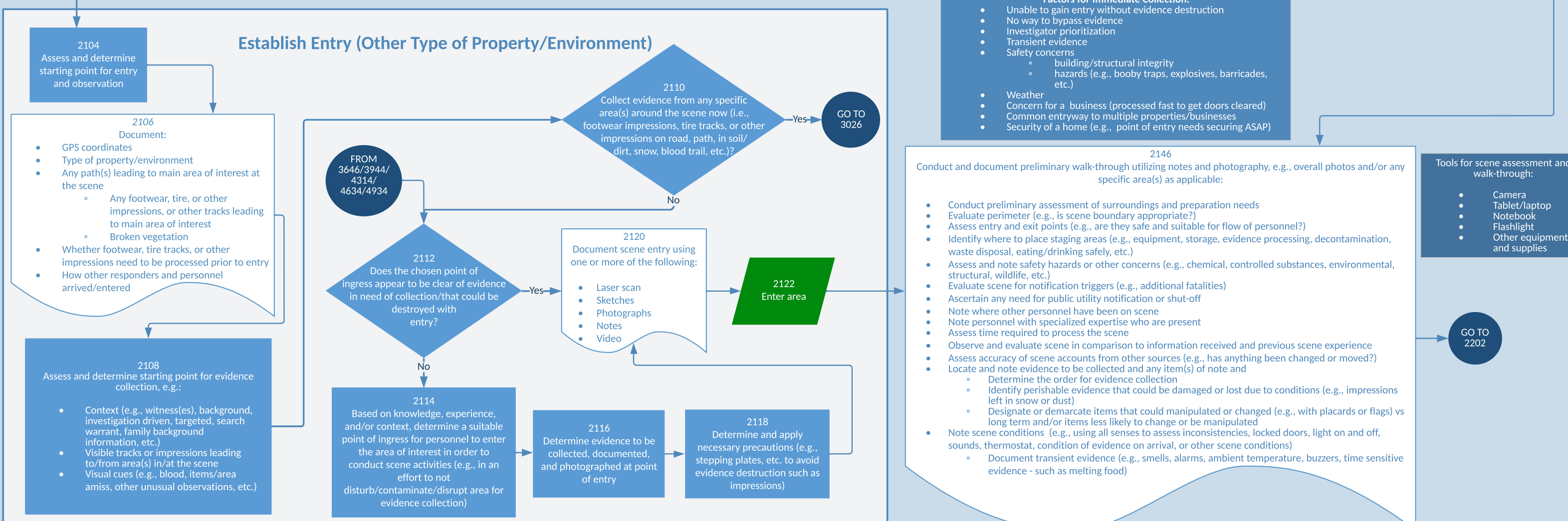
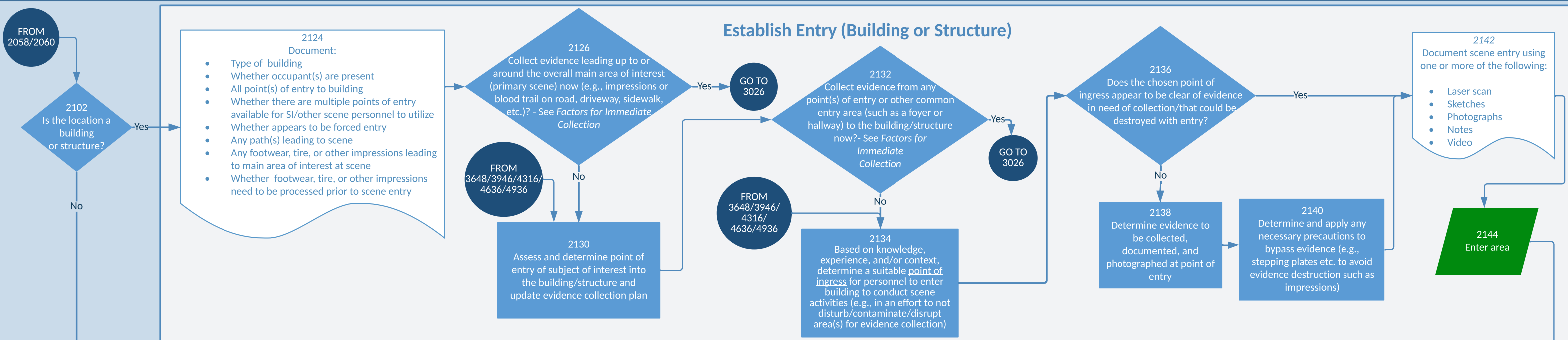


2000 - Scene Assessment and Setup (1 of 3): Initial Assessment



This process map provides a visual description and attempts to represent all reasonable variations of casework currently performed by crime scene investigators. OSAC does not necessarily support or endorse (as best practices) all of the different steps and paths depicted in this process map.

2100 - Scene Assessment and Setup (2 of 3): Entry Determination

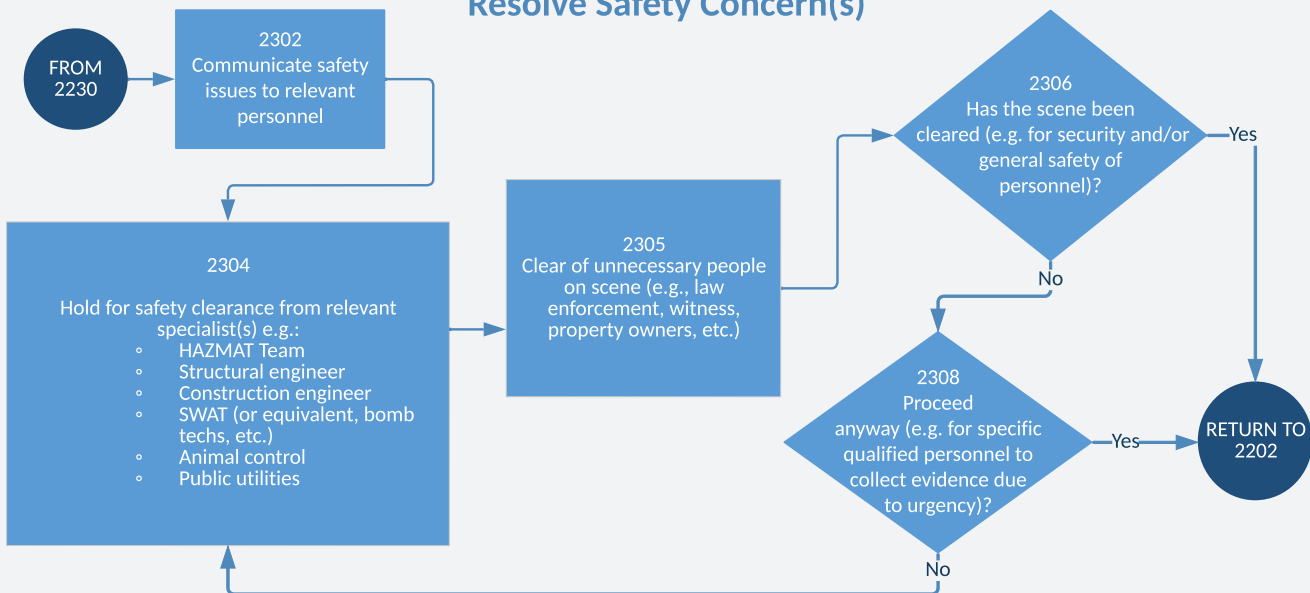


- Factors for Immediate Collection:**
- Unable to gain entry without evidence destruction
  - No way to bypass evidence
  - Investigator prioritization
  - Transient evidence
  - Safety concerns
    - building/structural integrity
    - hazards (e.g., booby traps, explosives, barricades, etc.)
  - Weather
  - Concern for a business (processed fast to get doors cleared)
  - Common entryway to multiple properties/businesses
  - Security of a home (e.g., point of entry needs securing ASAP)

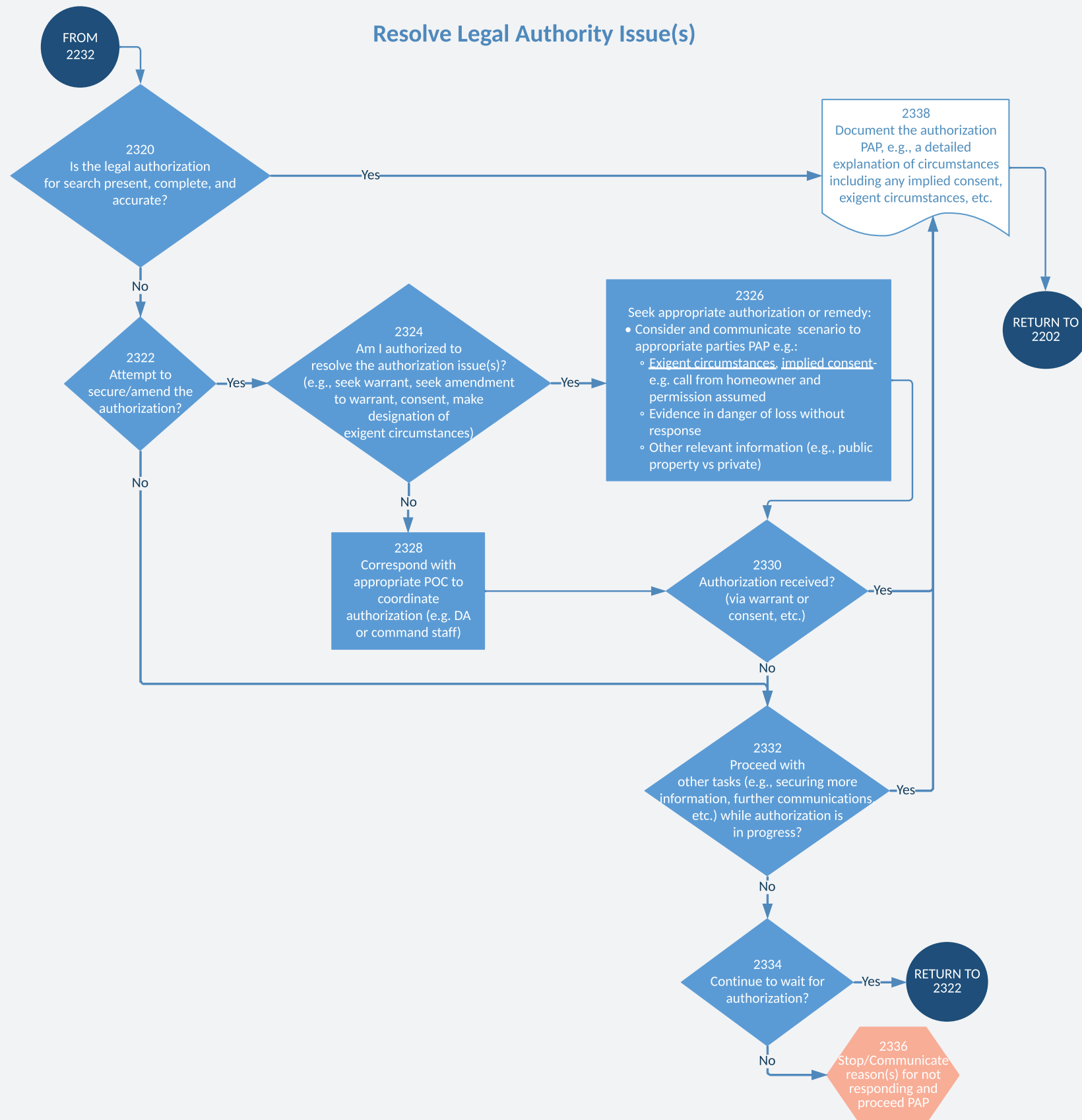


2300 - Troubleshooting (1 of 2)

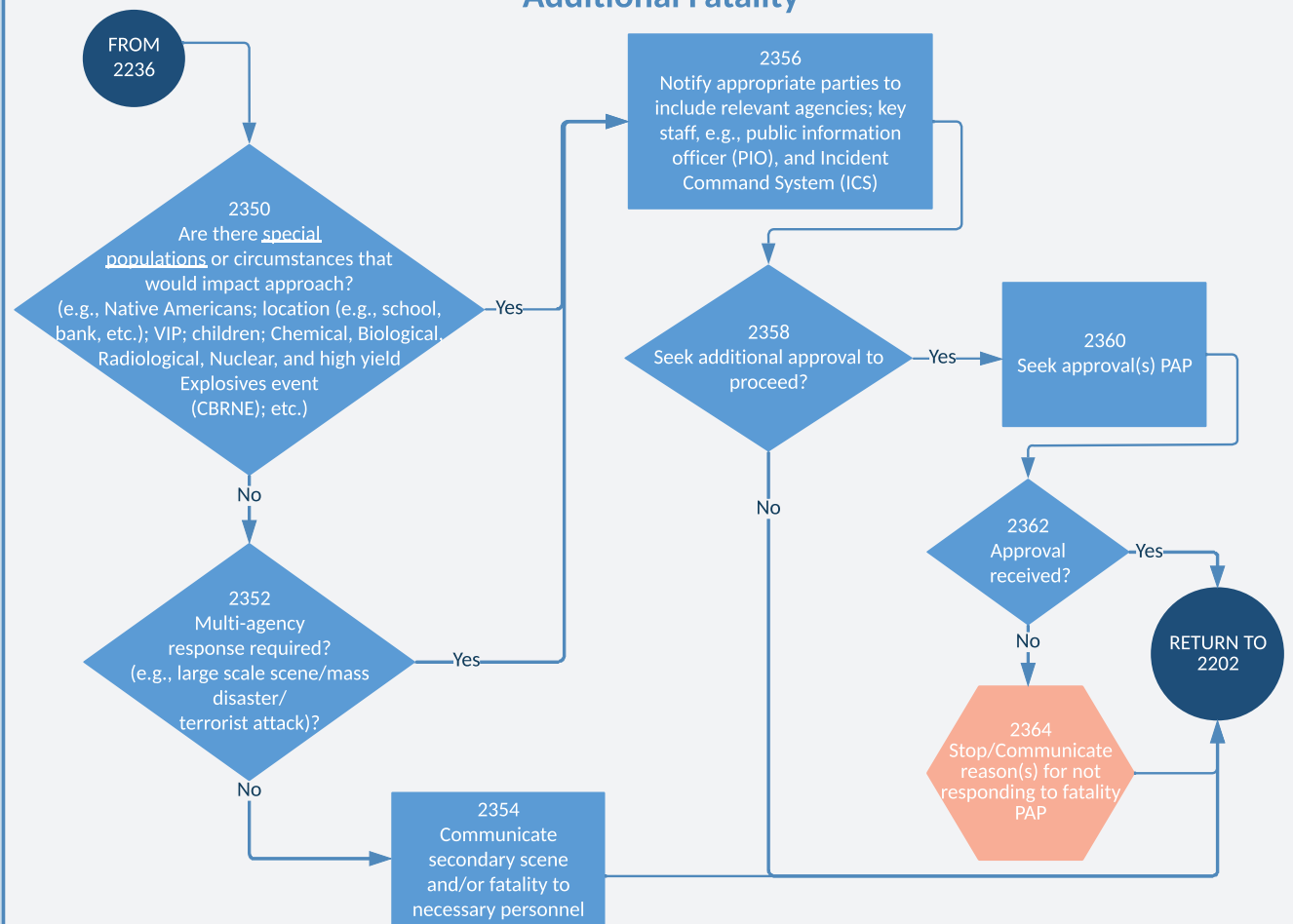
Resolve Safety Concern(s)



Resolve Legal Authority Issue(s)

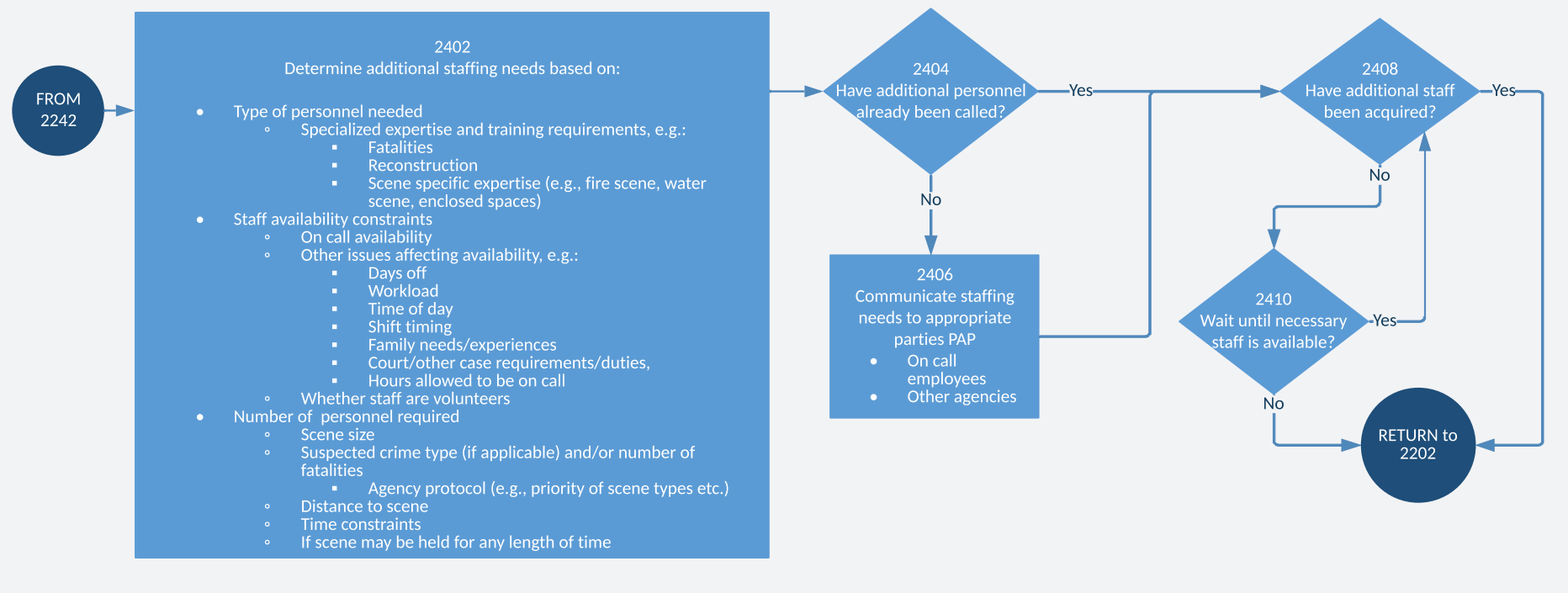


Conduct Communications, Special Populations, and Notifications for Additional Fatality



2400 - Troubleshooting (2 of 2)

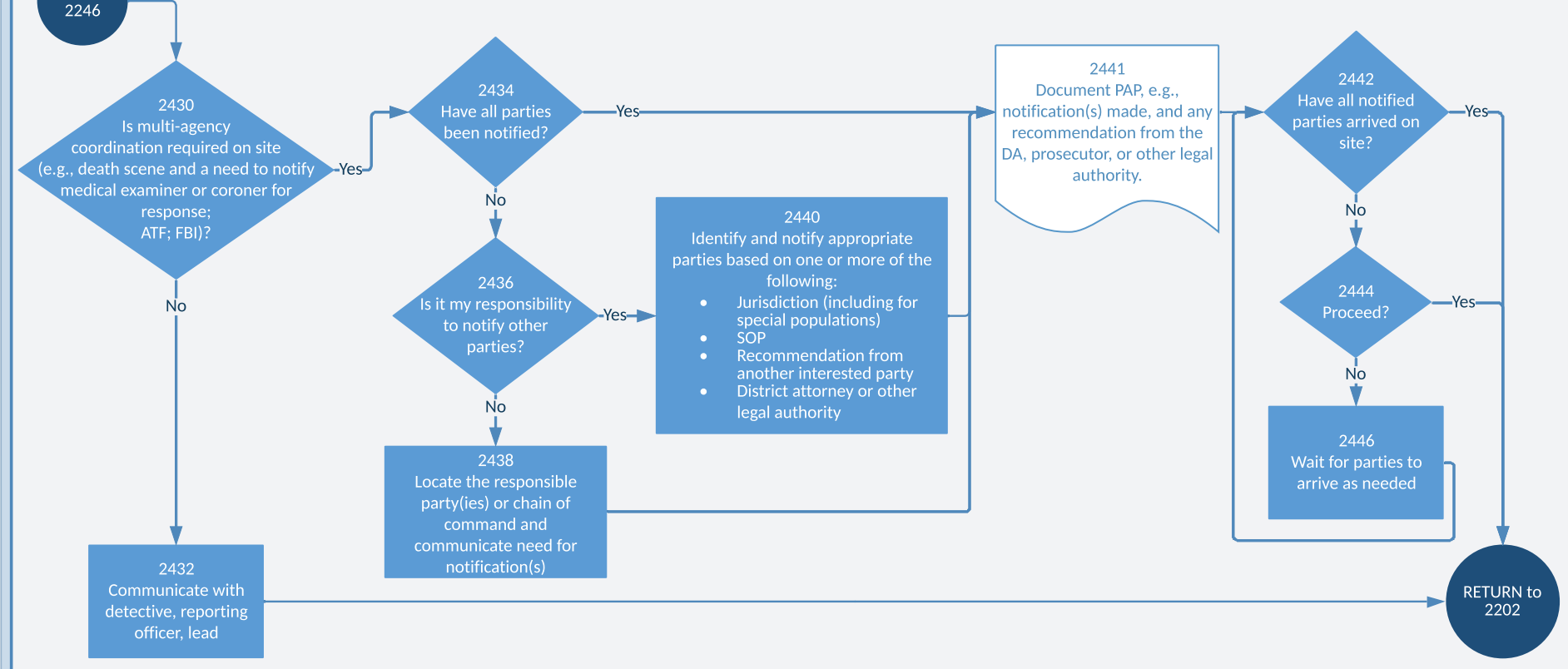
Assess Additional Staff Needs



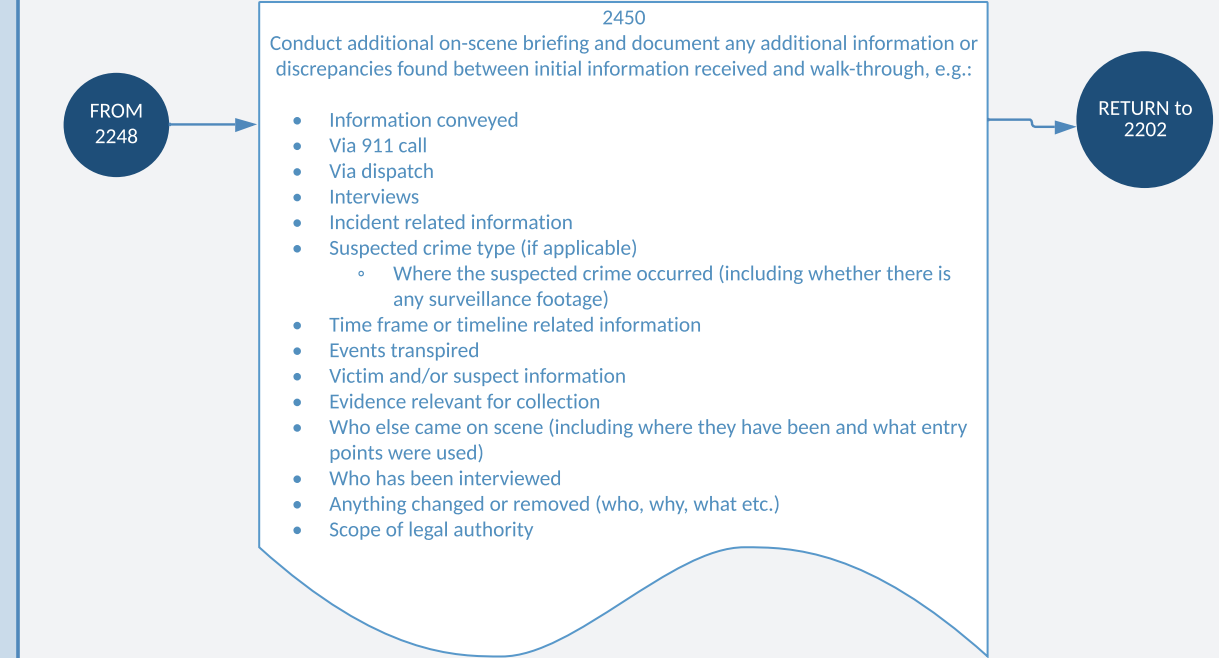
Address Logistical Needs



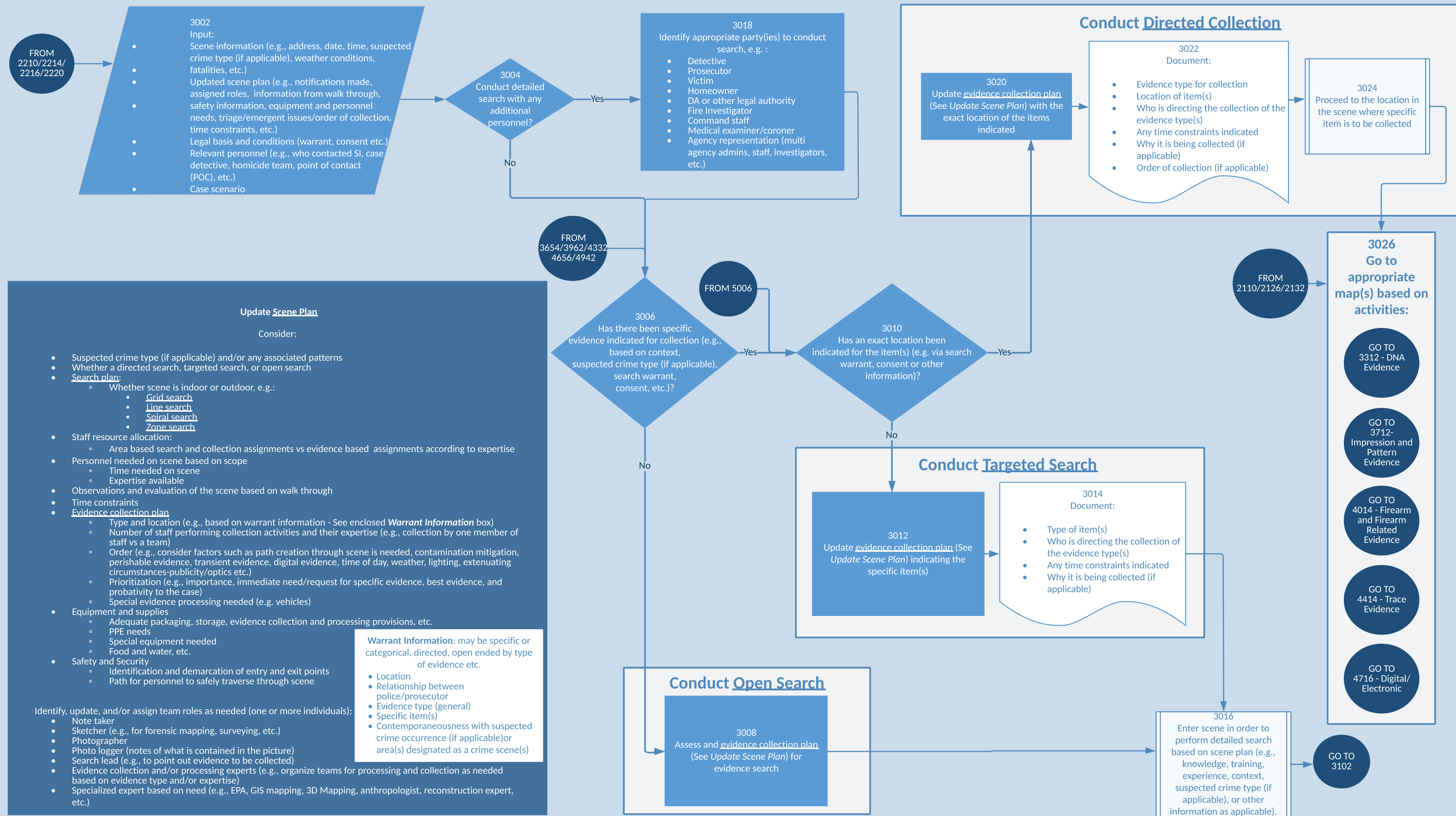
Perform Additional Communications and/or Notifications



Communicate and Address Informational Discrepancies



3000 - Evidence Collection (1 of 3): Activities Assessment and Search Type



**Update Scene Plan**

Consider:

- Suspected crime type (if applicable) and/or any associated patterns
- Whether a directed search, targeted search, or open search
- Search plan:
  - Whether scene is indoor or outdoor, e.g.:
    - Grid search
    - Line search
    - Spiral search
    - Zone search
- Staff resource allocation:
  - Area based search and collection assignments vs evidence based assignments according to expertise
- Personnel needed on scene based on scope
  - Time needed on scene
  - Expertise available
- Observations and evaluation of the scene based on walk through
- Time constraints
- Evidence collection plan
  - Type and location (e.g., based on warrant information - See enclosed **Warrant Information** box)
  - Number of staff performing collection activities and their expertise (e.g., collection by one member of staff vs a team)
  - Order (e.g., consider factors such as path creation through scene is needed, contamination mitigation, perishable evidence, transient evidence, digital evidence, time of day, weather, lighting, extenuating circumstances-publicity/optics etc.)
  - Prioritization (e.g., importance, immediate need/request for specific evidence, best evidence, and probativity to the case)
  - Special evidence processing needed (e.g. vehicles)
- Equipment and supplies
  - Adequate packaging, storage, evidence collection and processing provisions, etc.
  - PPE needs
  - Special equipment needed
  - Food and water, etc.
- Safety and Security
  - Identification and demarcation of entry and exit points
  - Path for personnel to safely traverse through scene

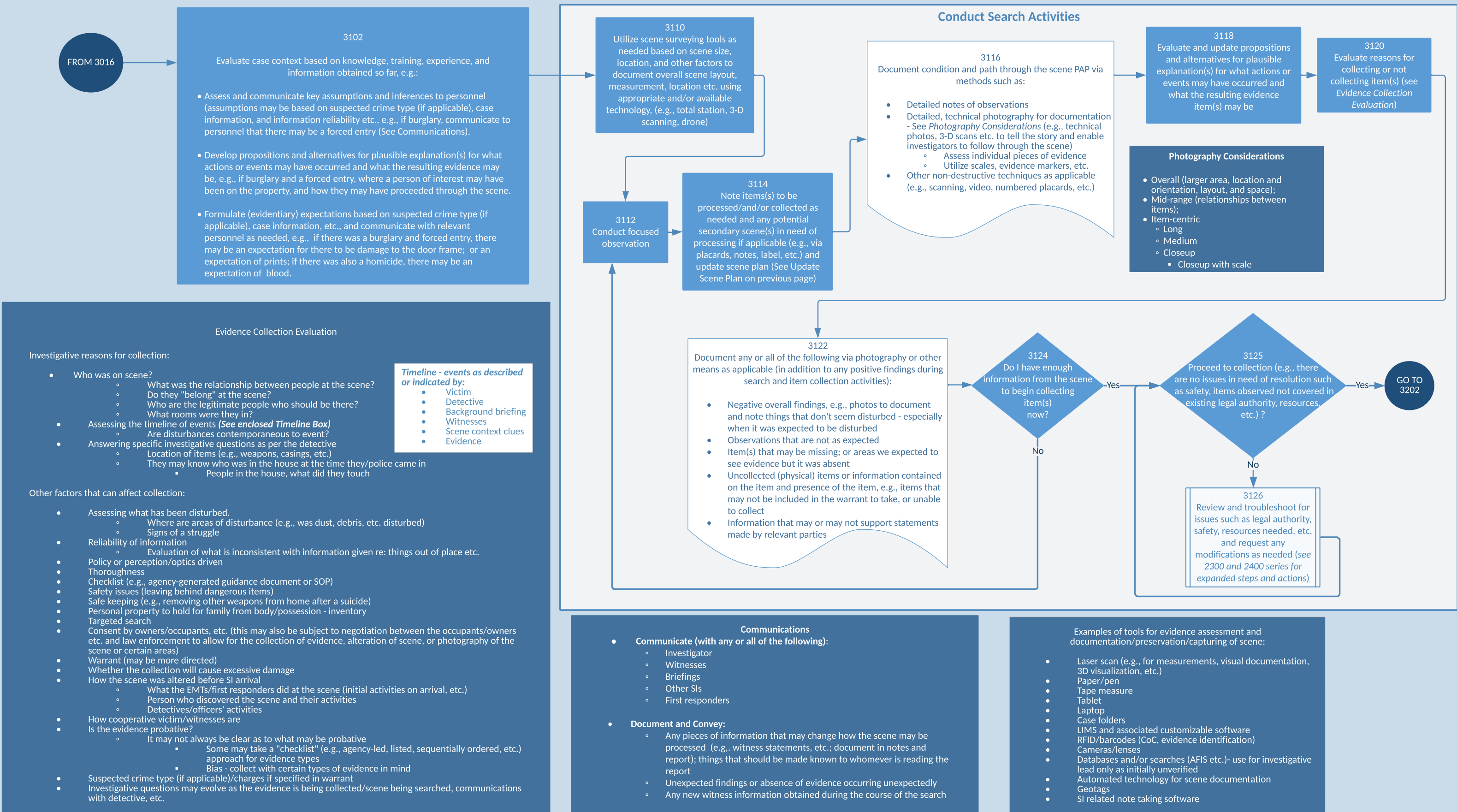
Identify, update, and/or assign team roles as needed (one or more individuals):

- Note taker
- Sketcher (e.g., for forensic mapping, surveying, etc.)
- Photographer
- Photo logger (notes of what is contained in the picture)
- Search lead (e.g., to point out evidence to be collected)
- Evidence collection and/or processing experts (e.g., organize teams for processing and collection as needed based on evidence type and/or expertise)
- Specialized expert based on need (e.g., EPA, GIS mapping, 3D Mapping, anthropologist, reconstruction expert, etc.)

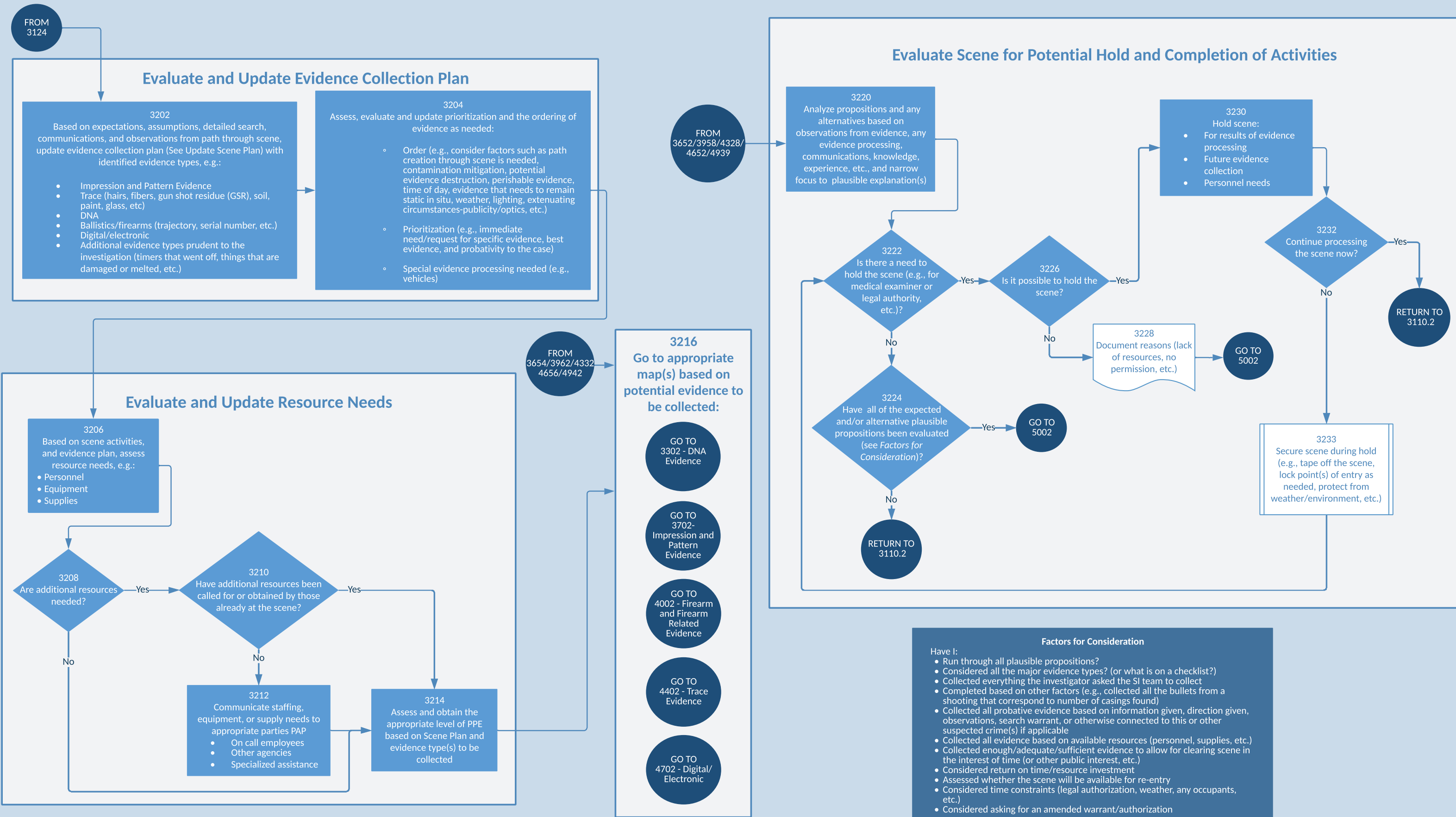
**Warrant Information:** may be specific or categorical, directed, open ended by type of evidence etc.

- Location
- Relationship between police/prosecutor
- Evidence type (general)
- Specific item(s)
- Contemporaneousness with suspected crime occurrence (if applicable) or area(s) designated as a crime scene(s)

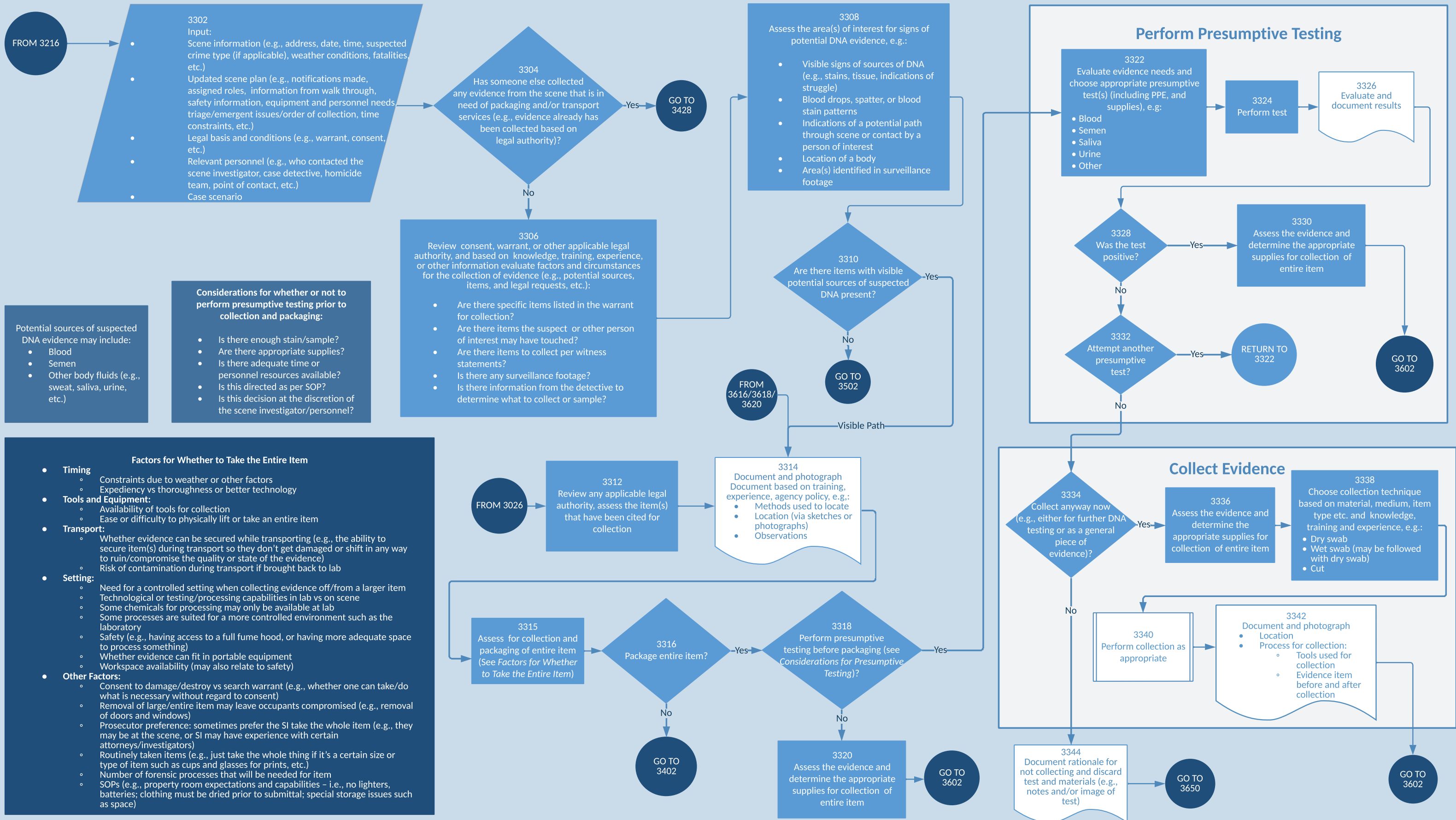
3100 - Evidence Collection (2 of 3): Scene Search



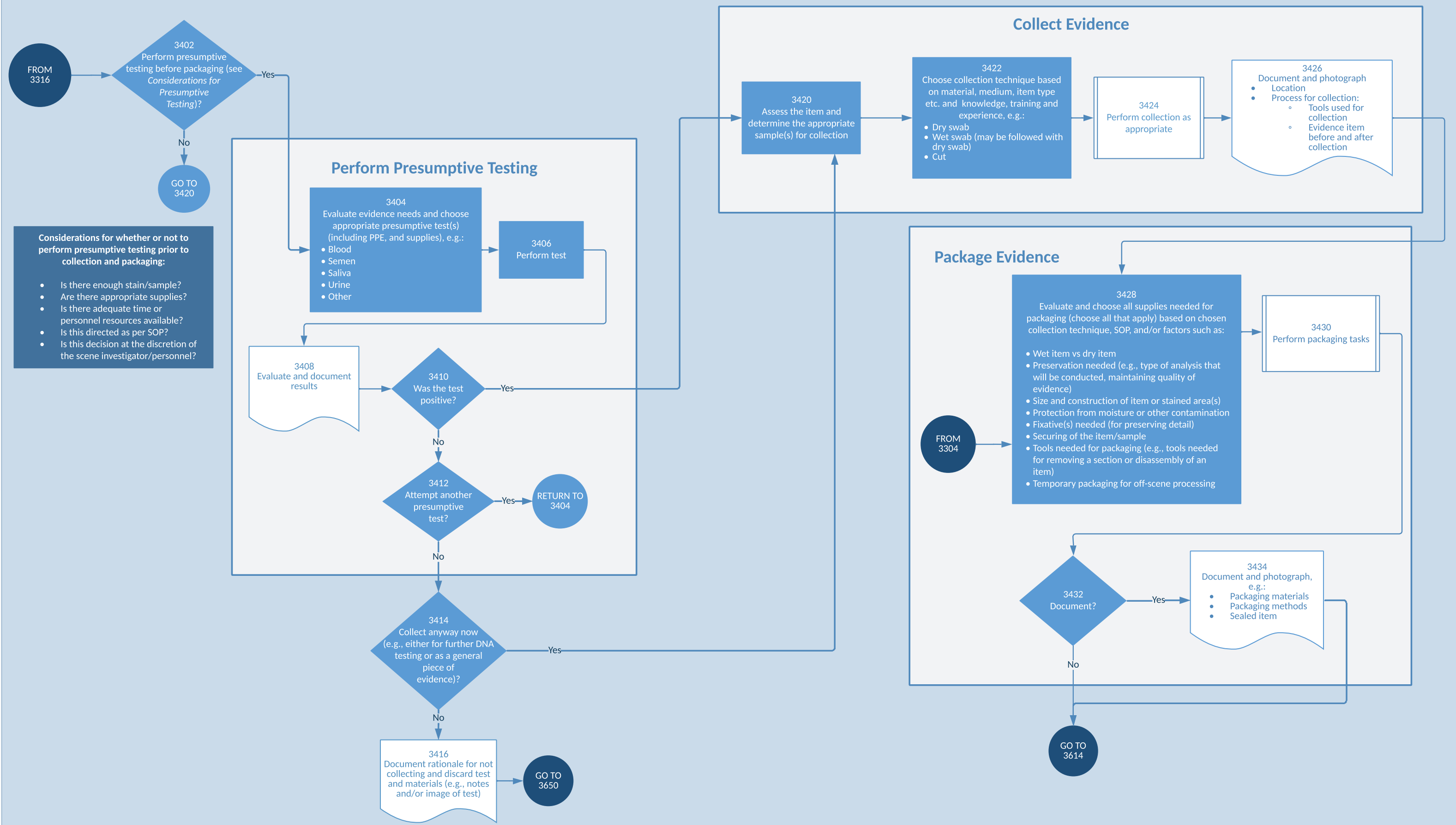
3200 - Evidence Collection (3 of 3): Detailed Evidence Search Activities



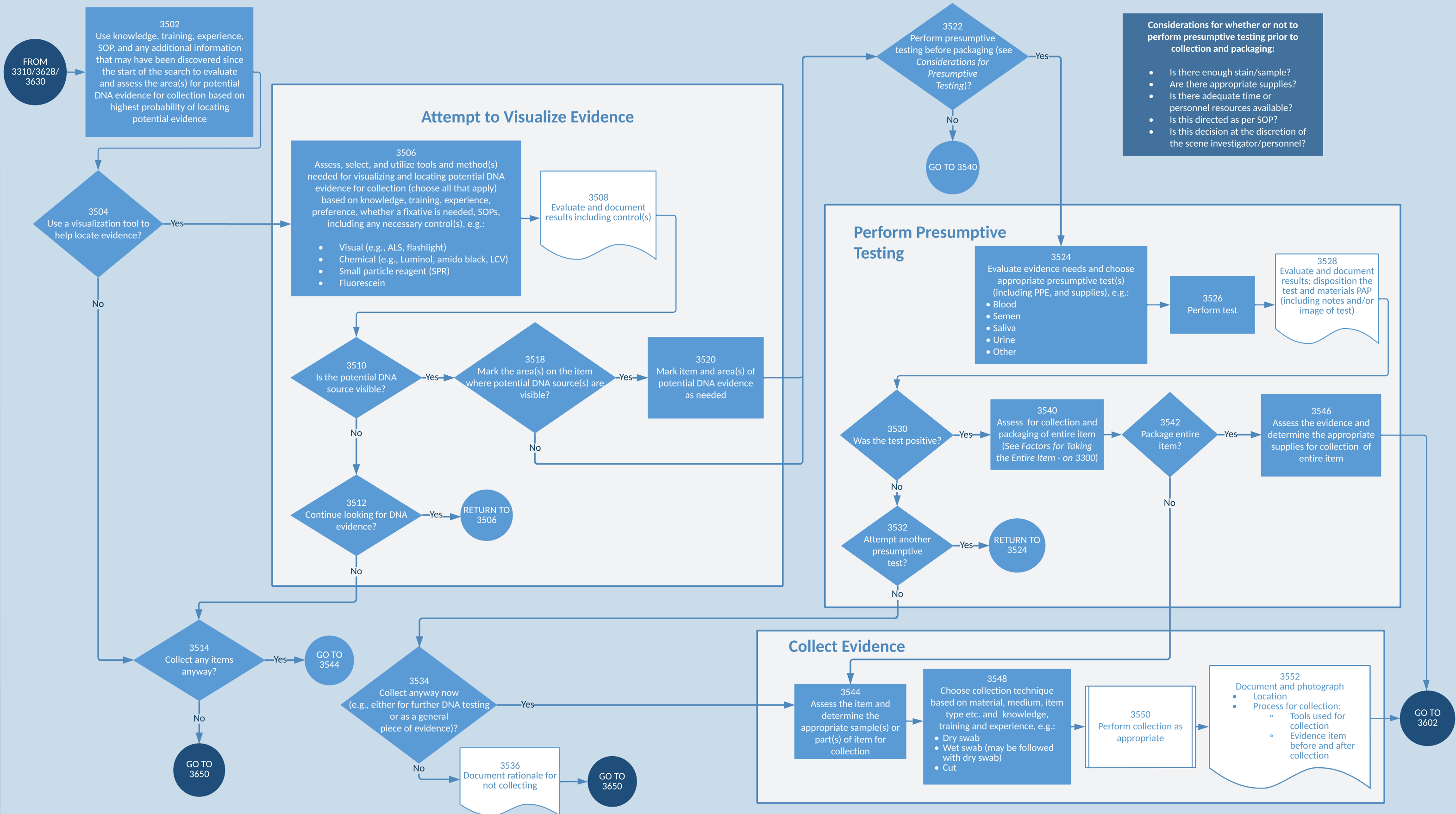
3300 - DNA Evidence Search and Collection (1 of 4): Initial Search and Assessment of Visible Evidence



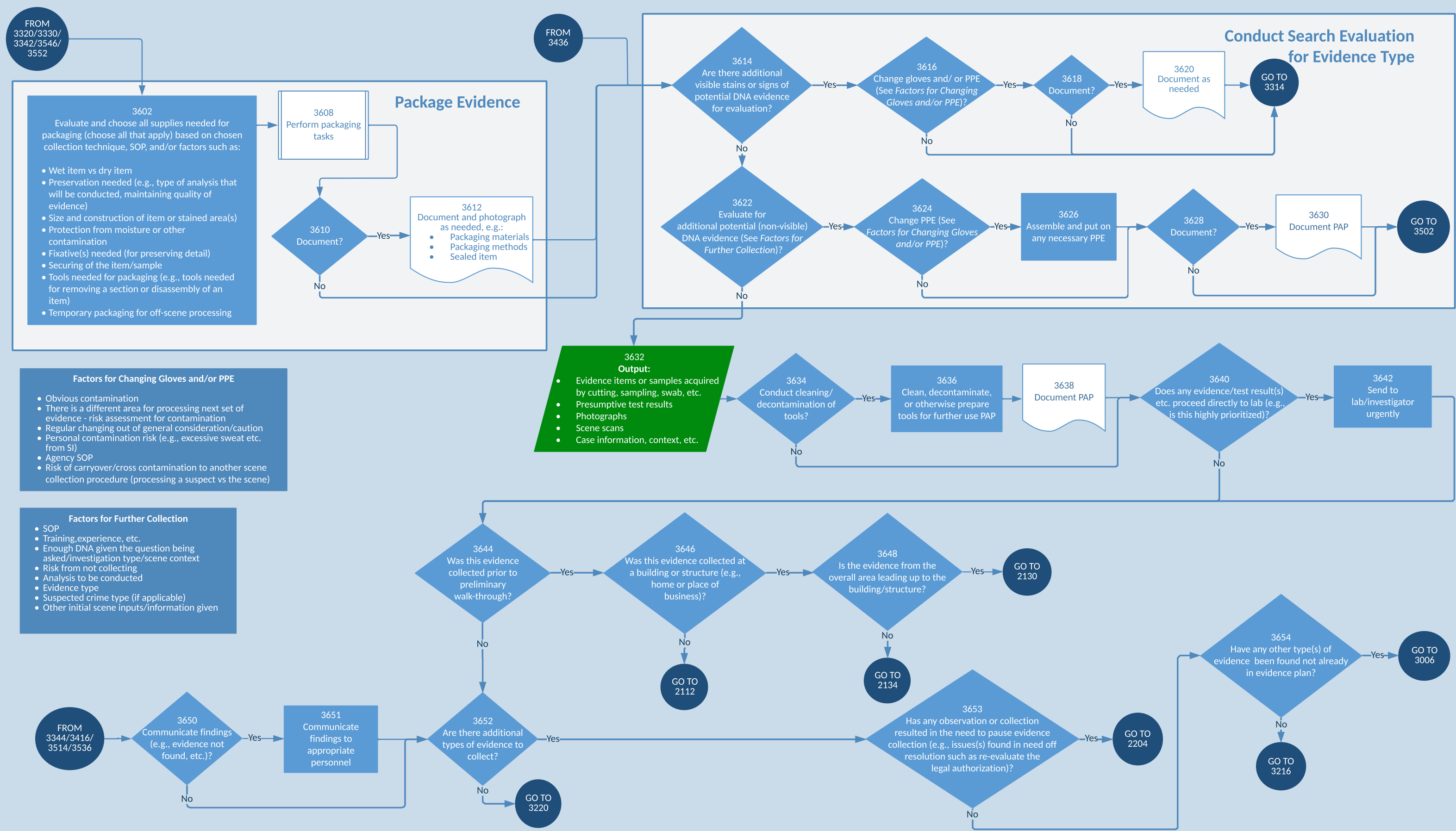
3400 - DNA Evidence Search and Collection (2 of 4): Visible Path/Not Collecting Entire Item



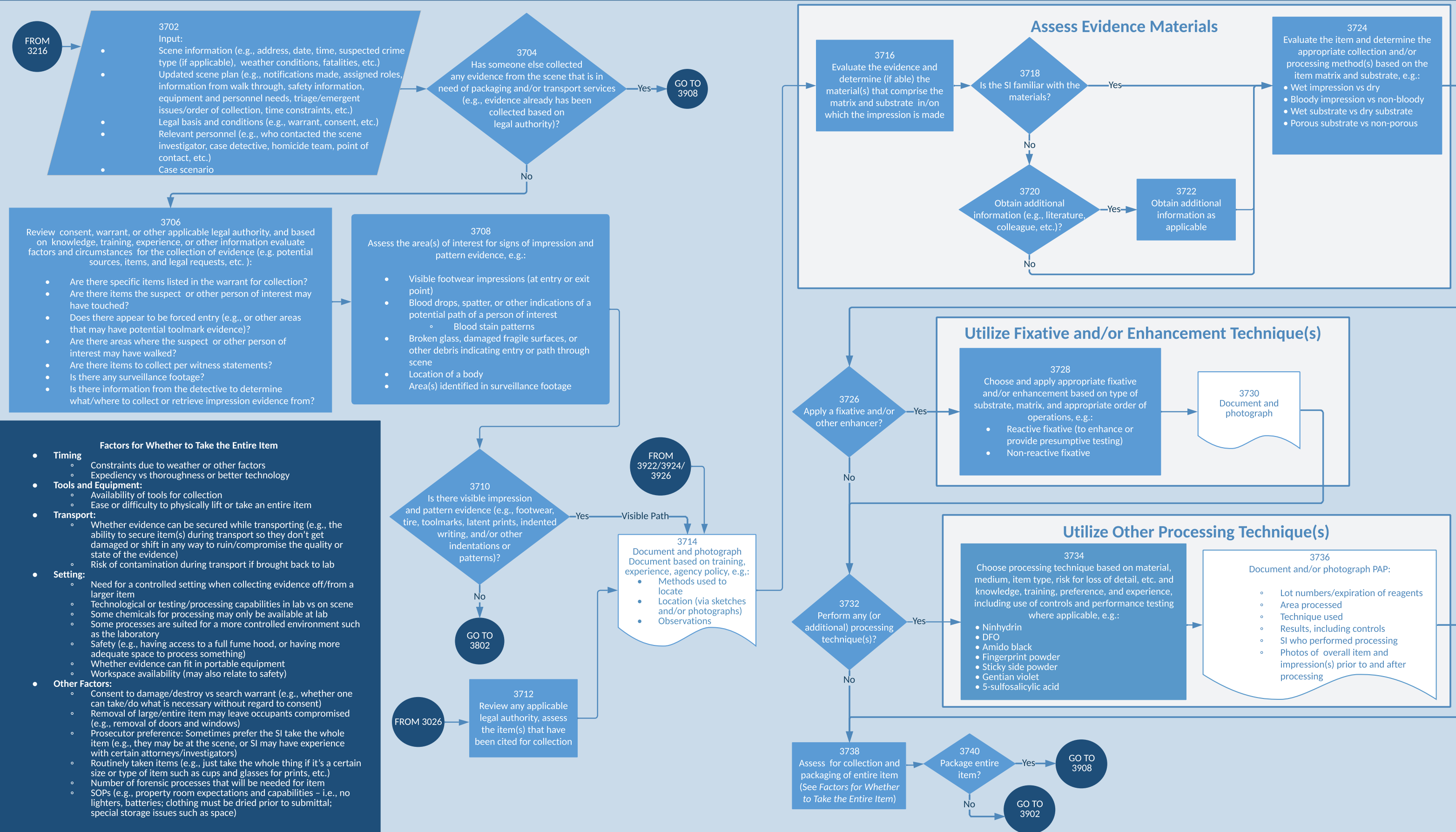
3500 - DNA Evidence Search and Collection (3 of 4): Non-Visible Path



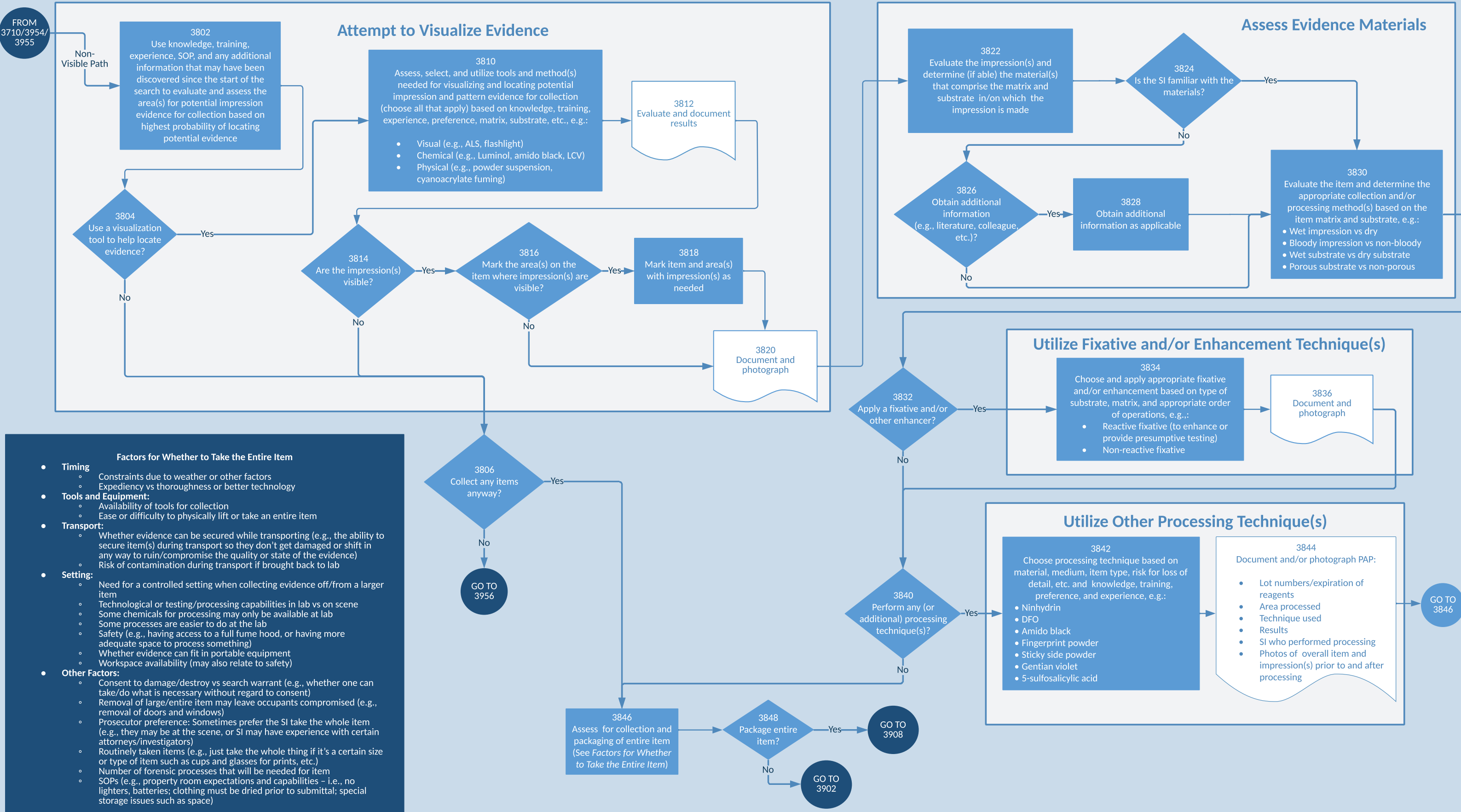
3600 - DNA Evidence Search and Collection (4 of 4): Packaging, and Search Evaluation and Completion



3700 - Impression and Pattern Evidence Search and Collection (1 of 3): Initial Search and Assessment of Visible Evidence



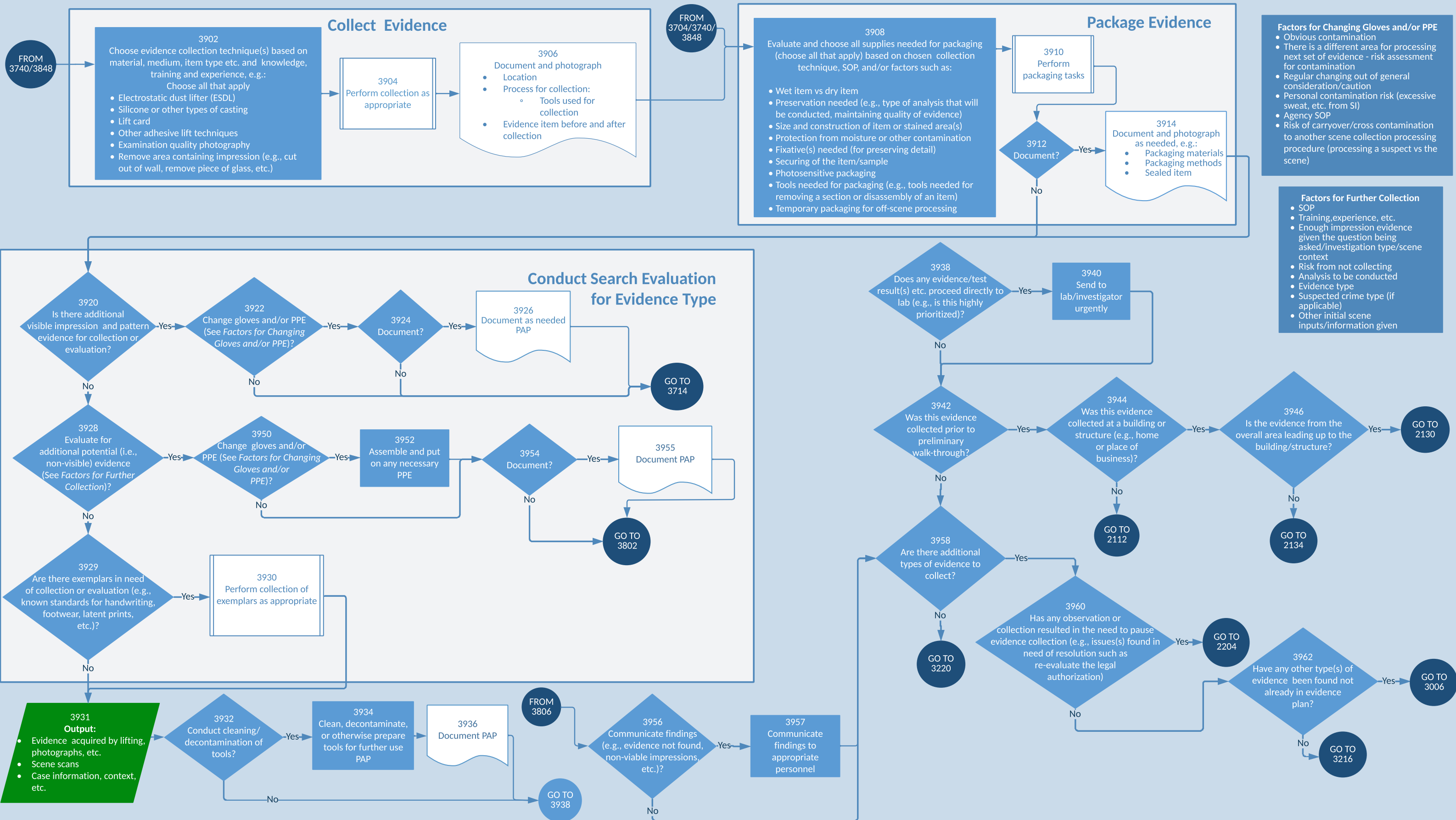
3800 - Impression and Pattern Evidence Search and Collection (2 of 3): Non-Visible Search



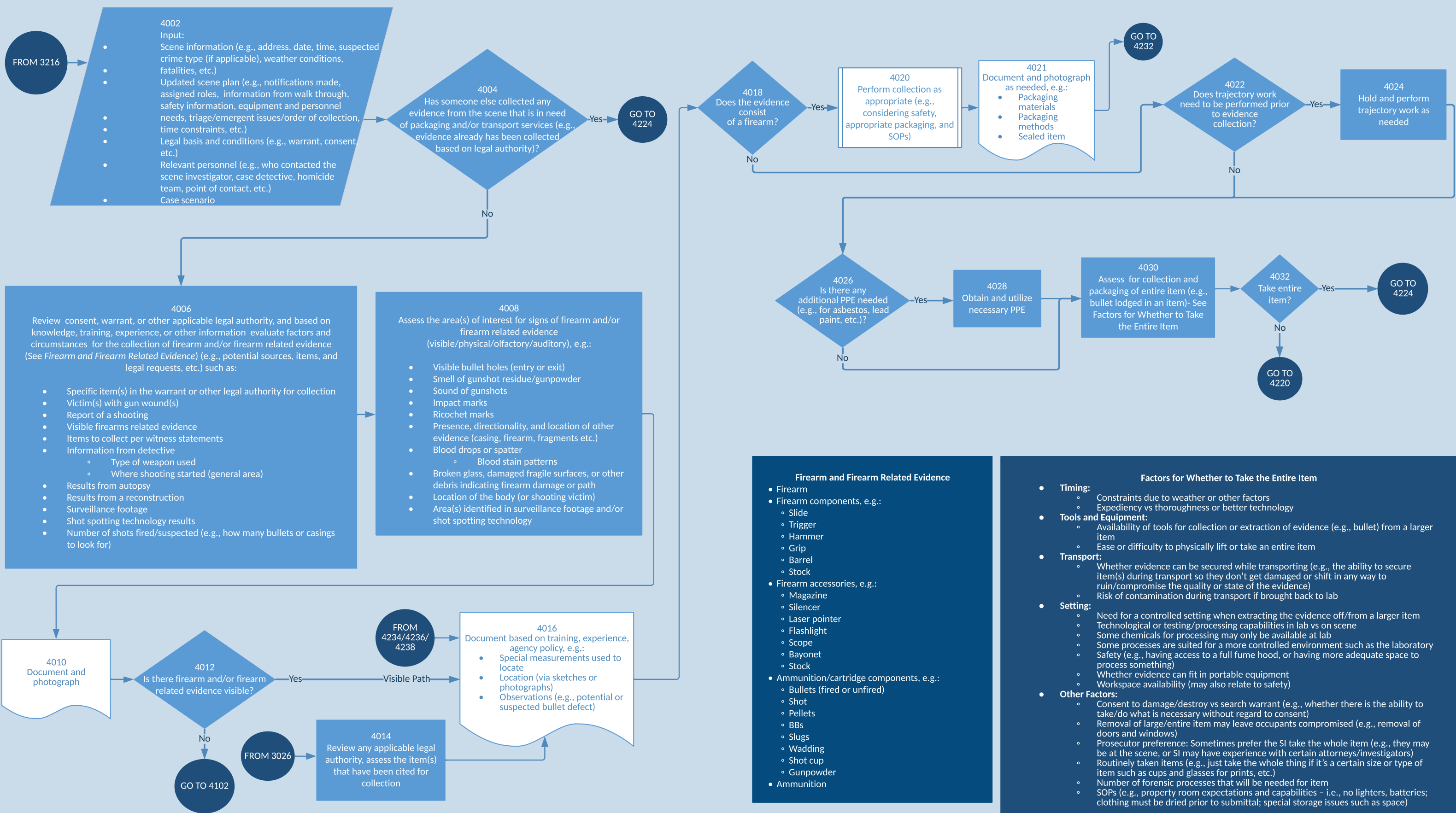
- Factors for Whether to Take the Entire Item**
- **Timing**
    - Constraints due to weather or other factors
    - Expediency vs thoroughness or better technology
  - **Tools and Equipment:**
    - Availability of tools for collection
    - Ease or difficulty to physically lift or take an entire item
  - **Transport:**
    - Whether evidence can be secured while transporting (e.g., the ability to secure item(s) during transport so they don't get damaged or shift in any way to ruin/compromise the quality or state of the evidence)
    - Risk of contamination during transport if brought back to lab
  - **Setting:**
    - Need for a controlled setting when collecting evidence off/from a larger item
    - Technological or testing/processing capabilities in lab vs on scene
    - Some chemicals for processing may only be available at lab
    - Some processes are easier to do at the lab
    - Safety (e.g., having access to a full fume hood, or having more adequate space to process something)
    - Whether evidence can fit in portable equipment
    - Workspace availability (may also relate to safety)
  - **Other Factors:**
    - Consent to damage/destroy vs search warrant (e.g., whether one can take/do what is necessary without regard to consent)
    - Removal of large/entire item may leave occupants compromised (e.g., removal of doors and windows)
    - Prosecutor preference: Sometimes prefer the SI take the whole item (e.g., they may be at the scene, or SI may have experience with certain attorneys/investigators)
    - Routinely taken items (e.g., just take the whole thing if it's a certain size or type of item such as cups and glasses for prints, etc.)
    - Number of forensic processes that will be needed for item
    - SOPs (e.g., property room expectations and capabilities - i.e., no lighters, batteries; clothing must be dried prior to submittal; special storage issues such as space)

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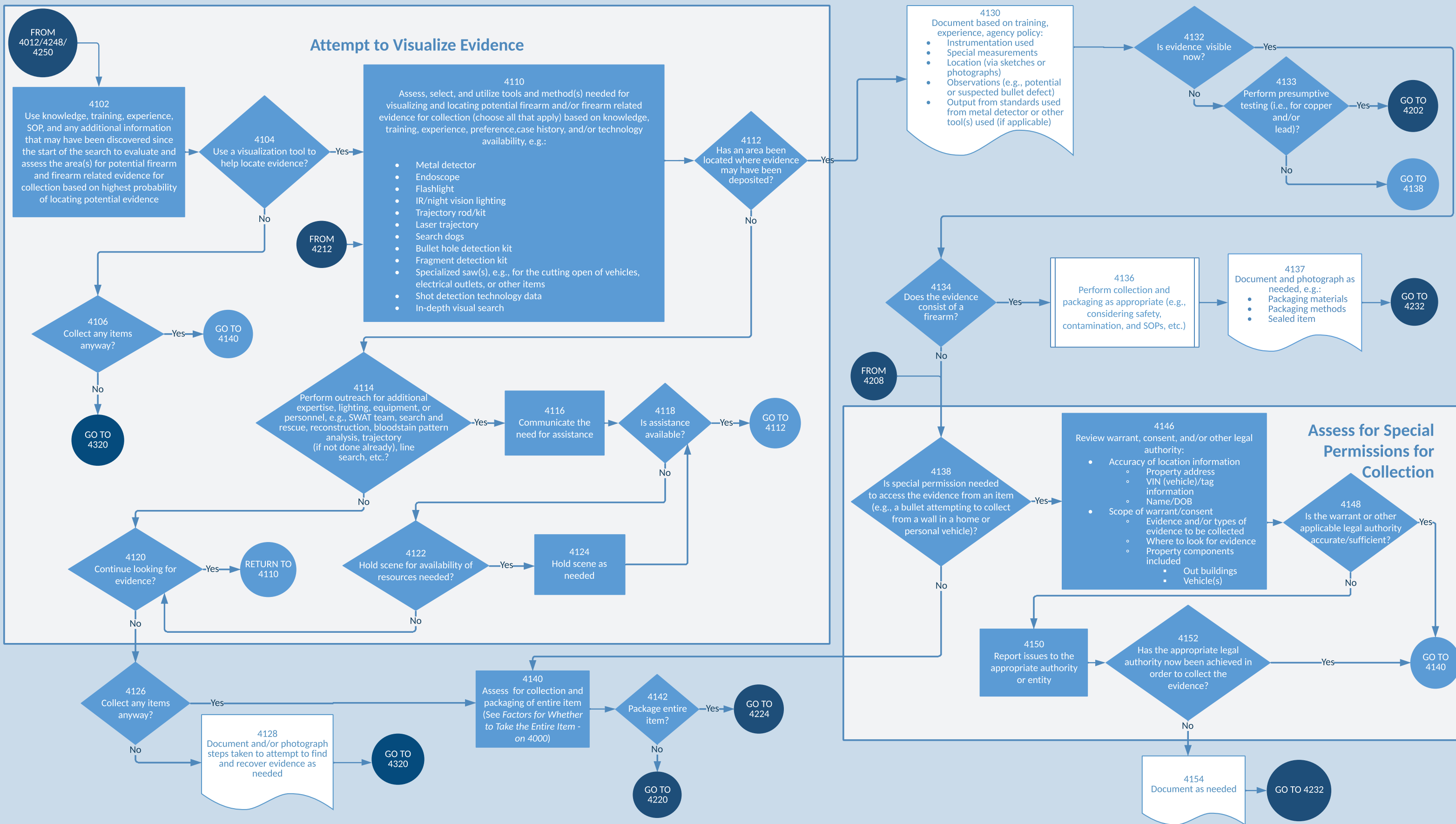
3900 - Impression and Pattern Evidence Search and Collection (3 of 3): Collection, Packaging, and Search Evaluation and Completion



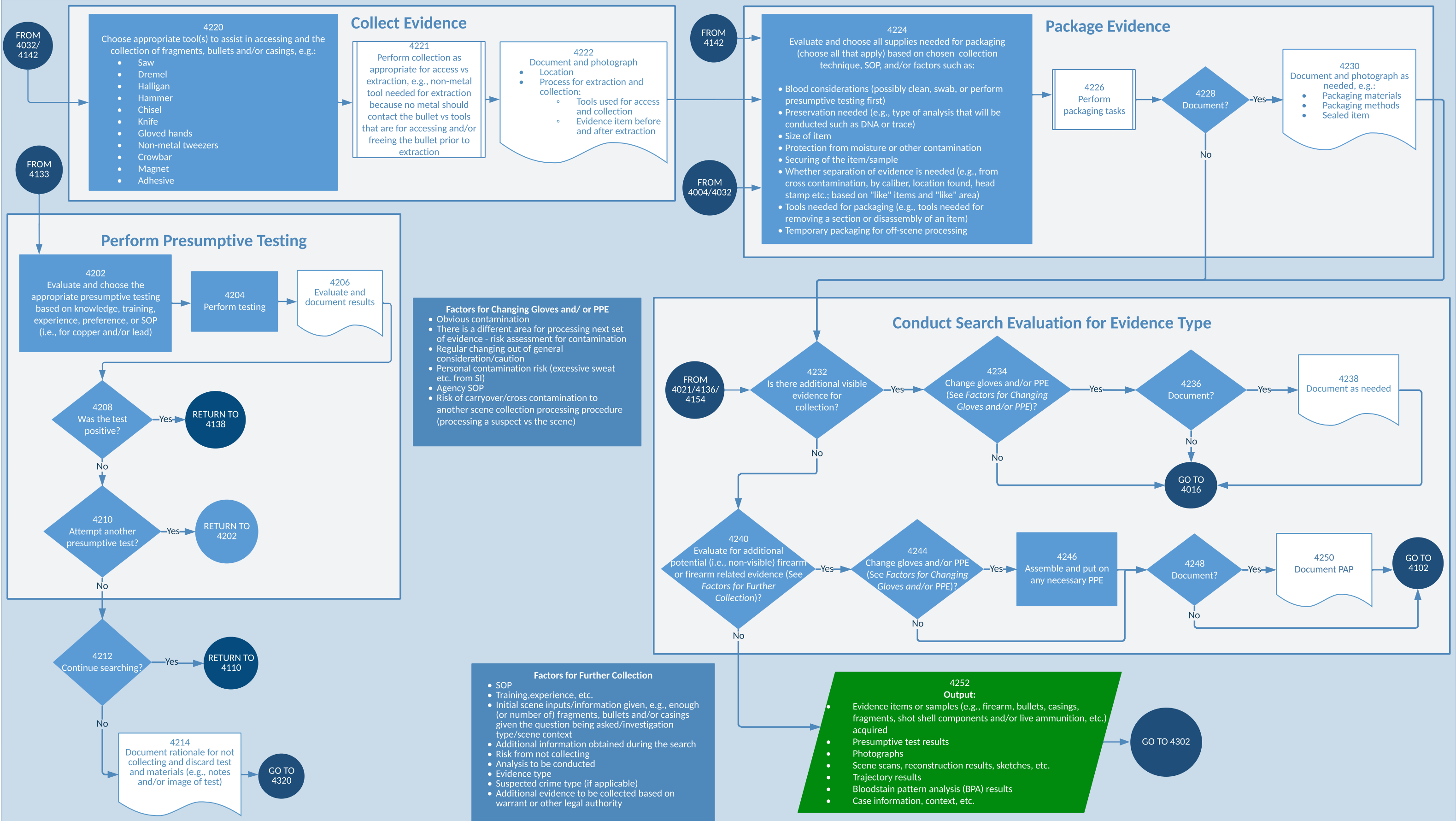
4000 - Firearm and Firearm Related Evidence Search and Collection (1 of 4): Initial Search and Assessment of Visible Evidence



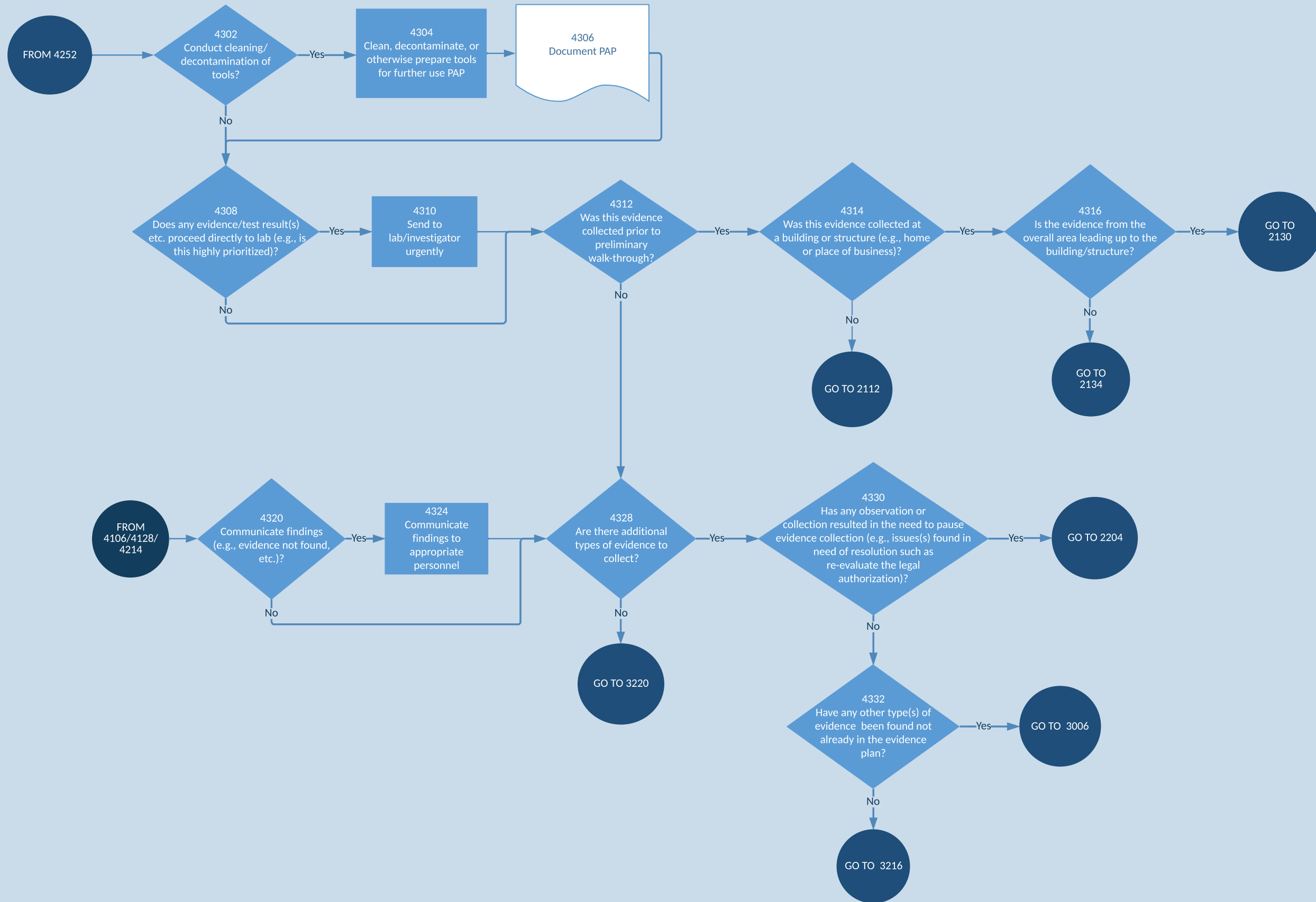
4100 - Firearm and Firearm Related Evidence Search and Collection (2 of 4): Non-Visible Search



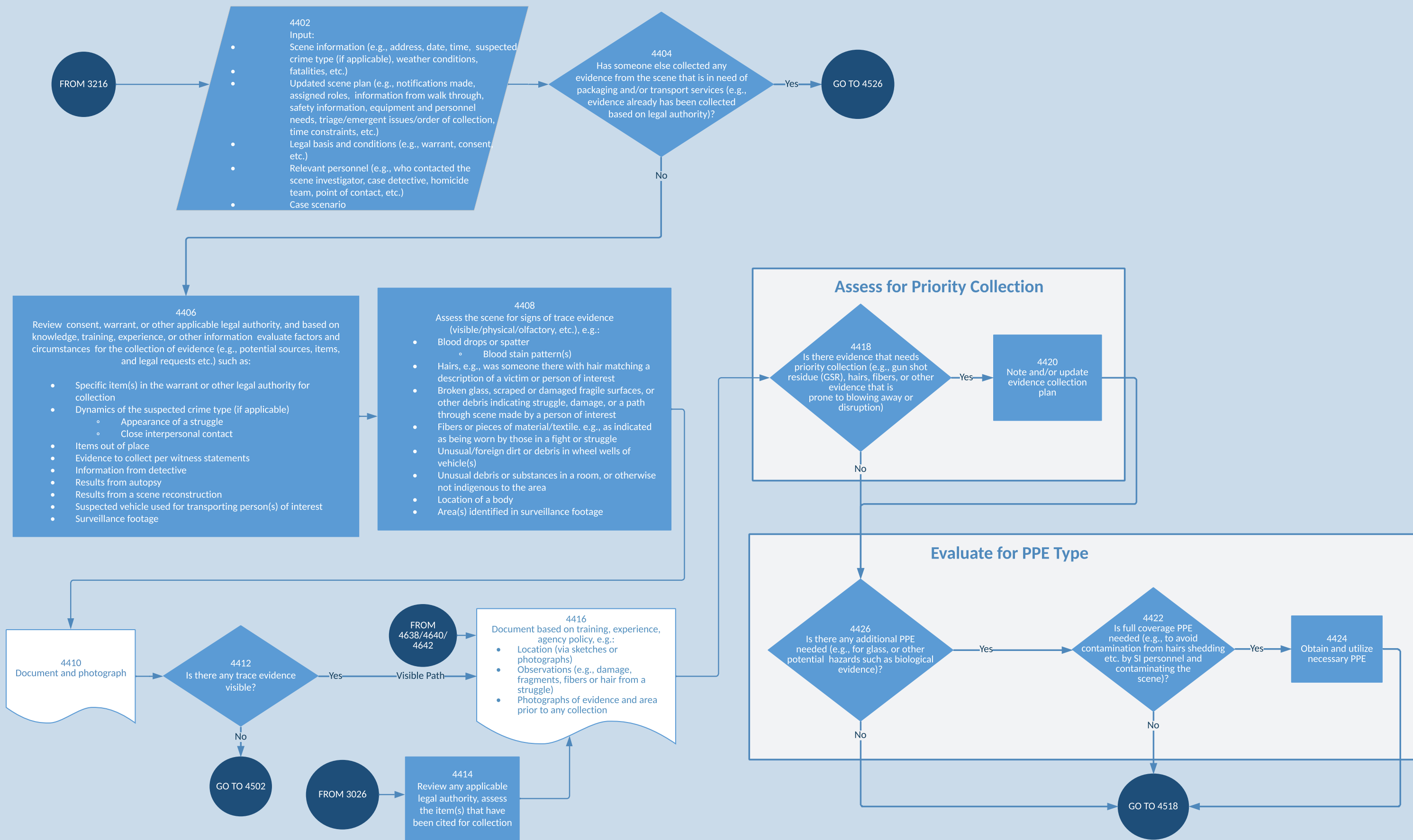
4200 - Firearm and Firearm Related Evidence Search and Collection (3 of 4): Evidence Collection



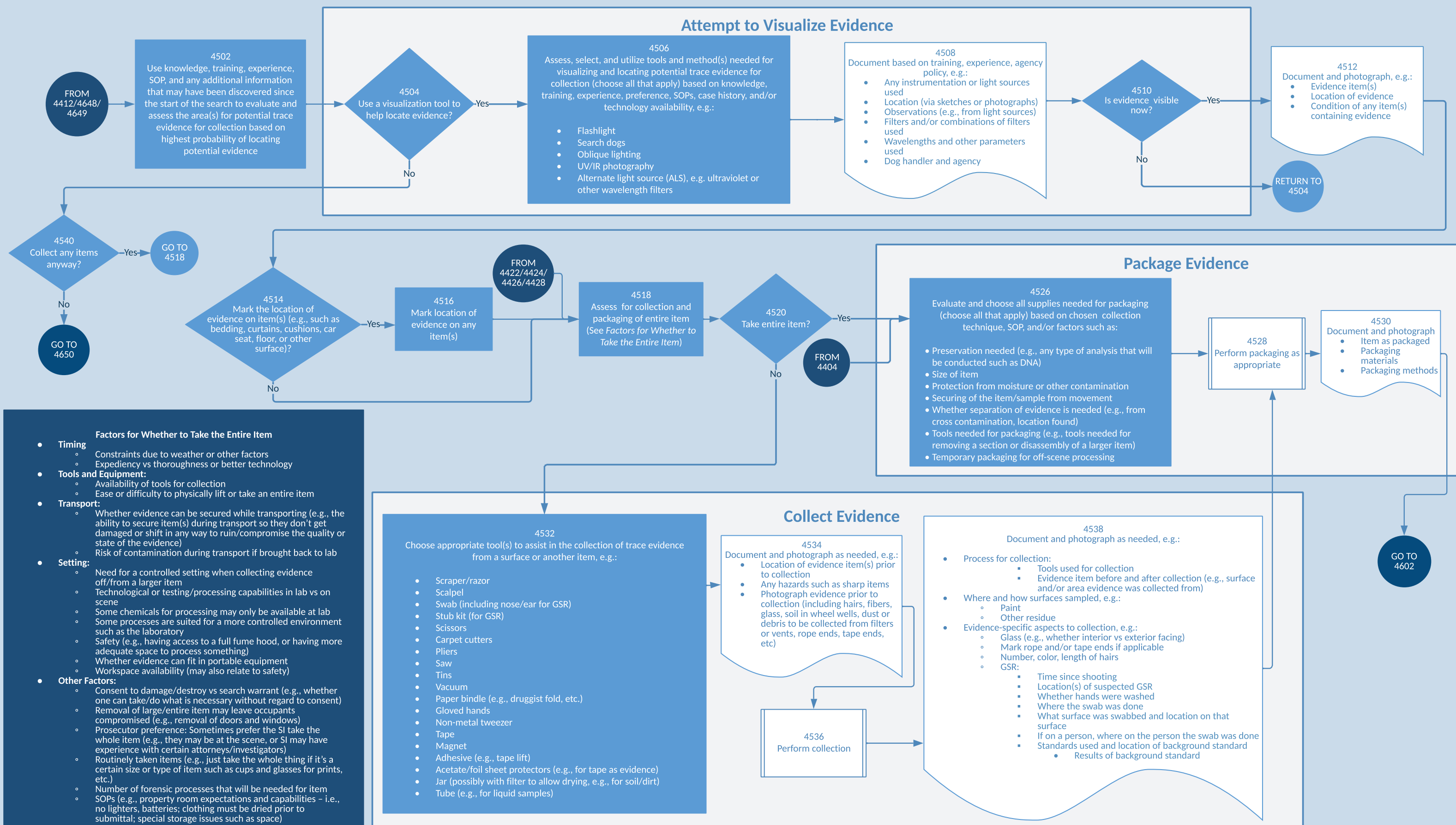
4300 - Firearm and Firearm Related Evidence Search and Collection (4 of 4): Assess for Search Completion



4400 - Trace Evidence Search and Collection(1 of 3): Initial Search and Assessment of Visible Evidence



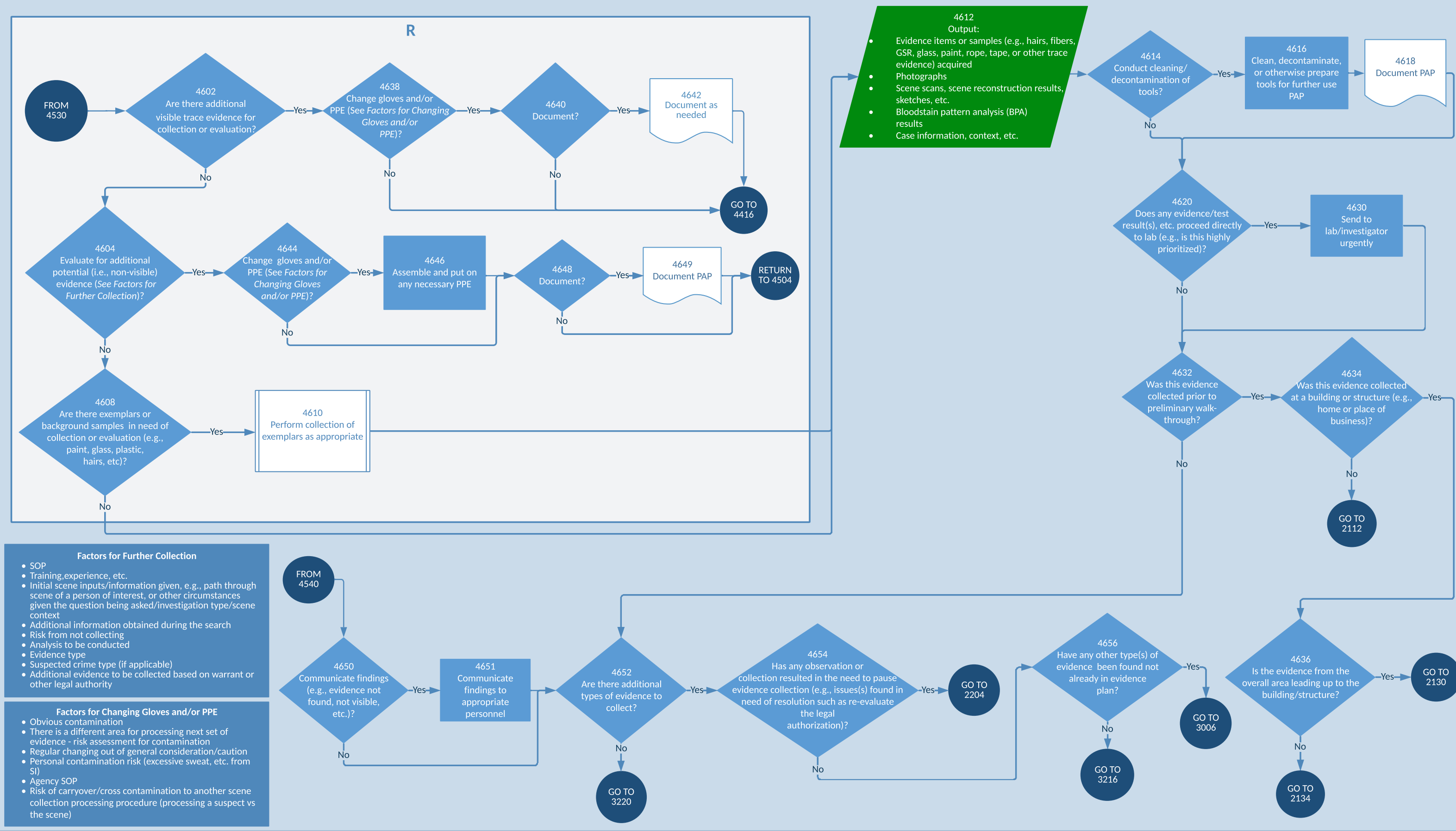
4500 - Trace Evidence Search and Collection (2 of 3): Non-Visible Search, Collection, and Packaging



**Factors for Whether to Take the Entire Item**

- **Timing**
  - Constraints due to weather or other factors
  - Expediency vs thoroughness or better technology
- **Tools and Equipment:**
  - Availability of tools for collection
  - Ease or difficulty to physically lift or take an entire item
- **Transport:**
  - Whether evidence can be secured while transporting (e.g., the ability to secure item(s) during transport so they don't get damaged or shift in any way to ruin/compromise the quality or state of the evidence)
  - Risk of contamination during transport if brought back to lab
- **Setting:**
  - Need for a controlled setting when collecting evidence off/from a larger item
  - Technological or testing/processing capabilities in lab vs on scene
  - Some chemicals for processing may only be available at lab
  - Some processes are suited for a more controlled environment such as the laboratory
  - Safety (e.g., having access to a full fume hood, or having more adequate space to process something)
  - Whether evidence can fit in portable equipment
  - Workspace availability (may also relate to safety)
- **Other Factors:**
  - Consent to damage/destroy vs search warrant (e.g., whether one can take/do what is necessary without regard to consent)
  - Removal of large/entire item may leave occupants compromised (e.g., removal of doors and windows)
  - Prosecutor preference: Sometimes prefer the SI take the whole item (e.g., they may be at the scene, or SI may have experience with certain attorneys/investigators)
  - Routinely taken items (e.g., just take the whole thing if it's a certain size or type of item such as cups and glasses for prints, etc.)
  - Number of forensic processes that will be needed for item SOPs (e.g., property room expectations and capabilities - i.e., no lighters, batteries; clothing must be dried prior to submittal; special storage issues such as space)

4600 - Trace Evidence Search and Collection (3 of 3): Search Evaluation and Completion



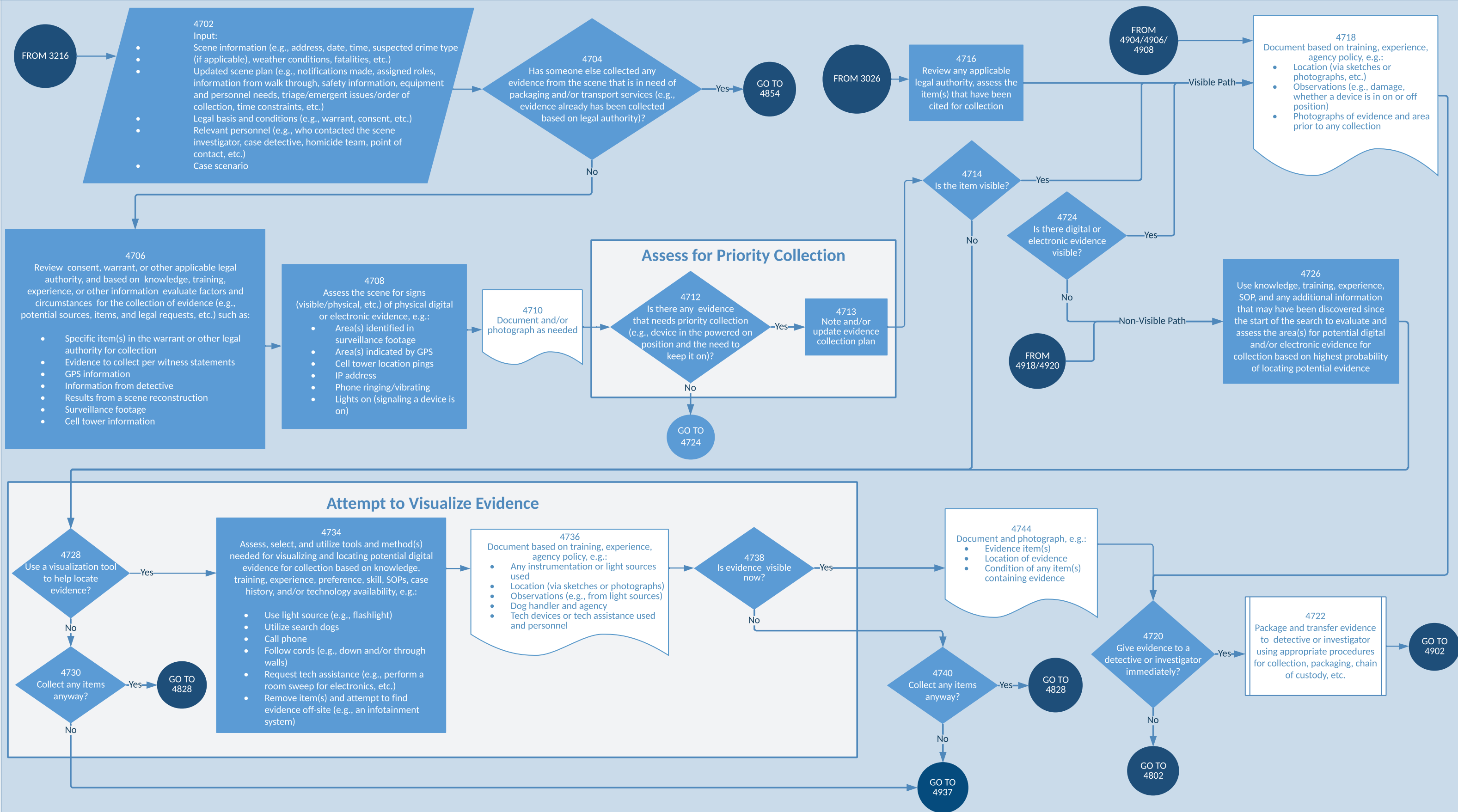
**Factors for Further Collection**

- SOP
- Training, experience, etc.
- Initial scene inputs/information given, e.g., path through scene of a person of interest, or other circumstances given the question being asked/investigation type/scene context
- Additional information obtained during the search
- Risk from not collecting
- Analysis to be conducted
- Evidence type
- Suspected crime type (if applicable)
- Additional evidence to be collected based on warrant or other legal authority

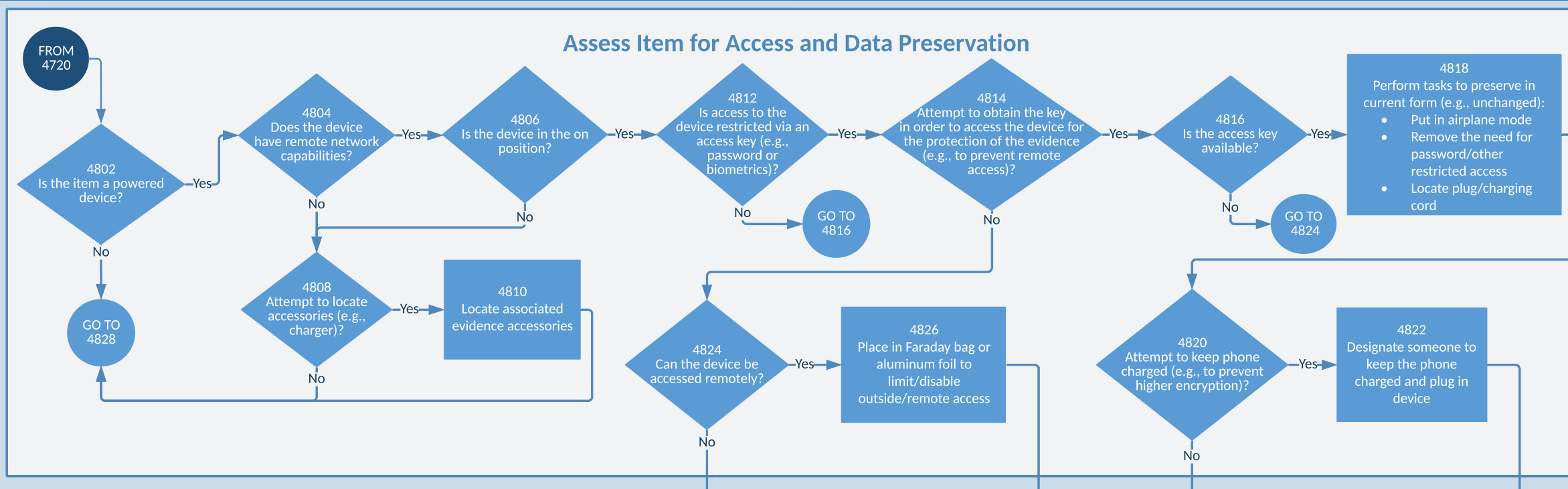
**Factors for Changing Gloves and/or PPE**

- Obvious contamination
- There is a different area for processing next set of evidence - risk assessment for contamination
- Regular changing out of general consideration/caution
- Personal contamination risk (excessive sweat, etc. from SI)
- Agency SOP
- Risk of carryover/cross contamination to another scene collection processing procedure (processing a suspect vs the scene)

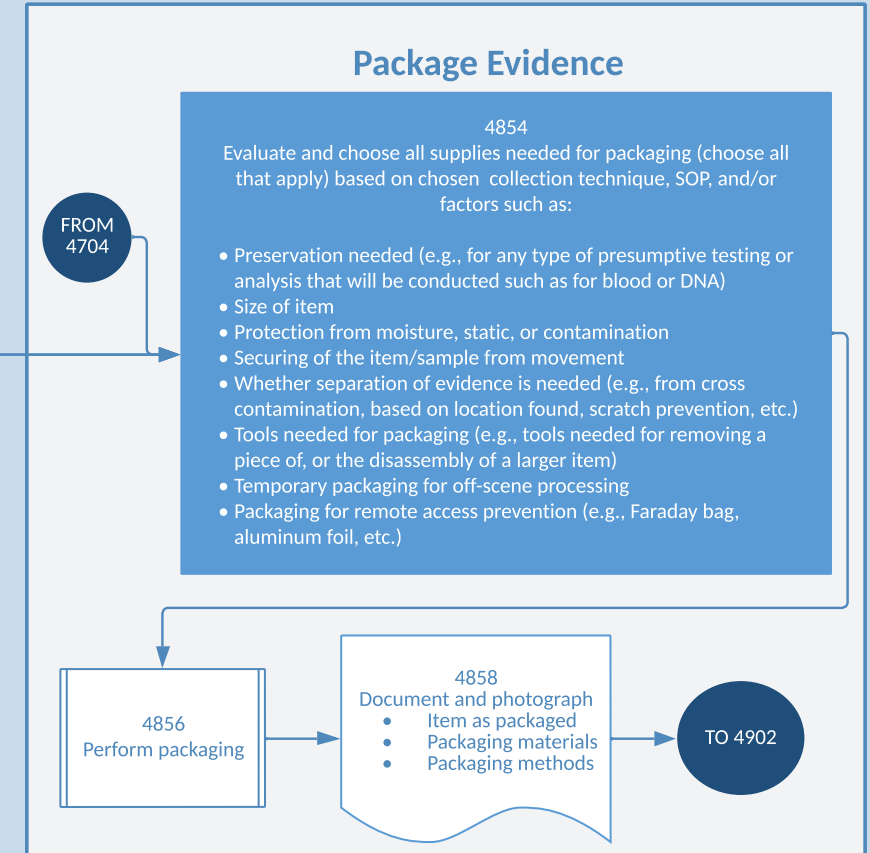
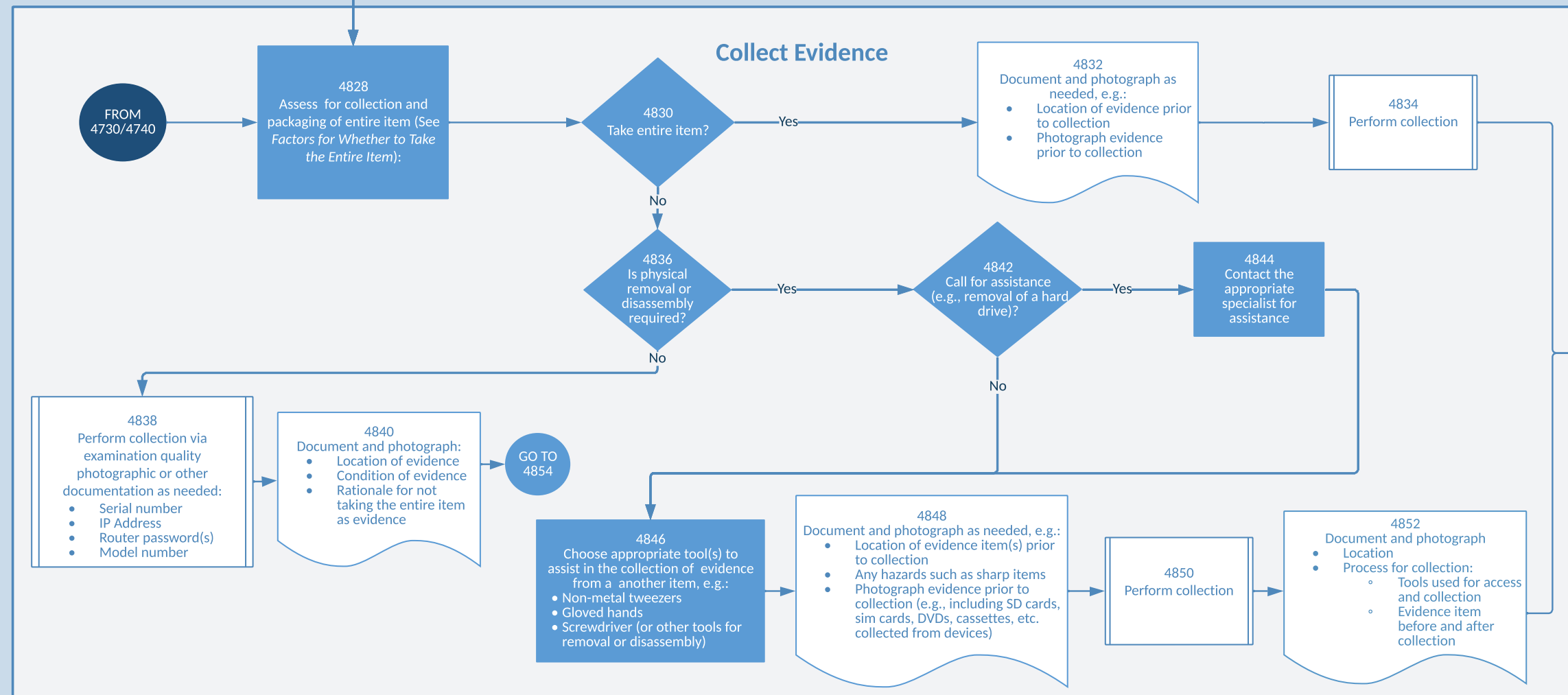
4700 - Digital Evidence Search and Collection (1 of 3): Initial Search



4800 - Digital Evidence Search and Collection (2 of 3): Collection and Packaging

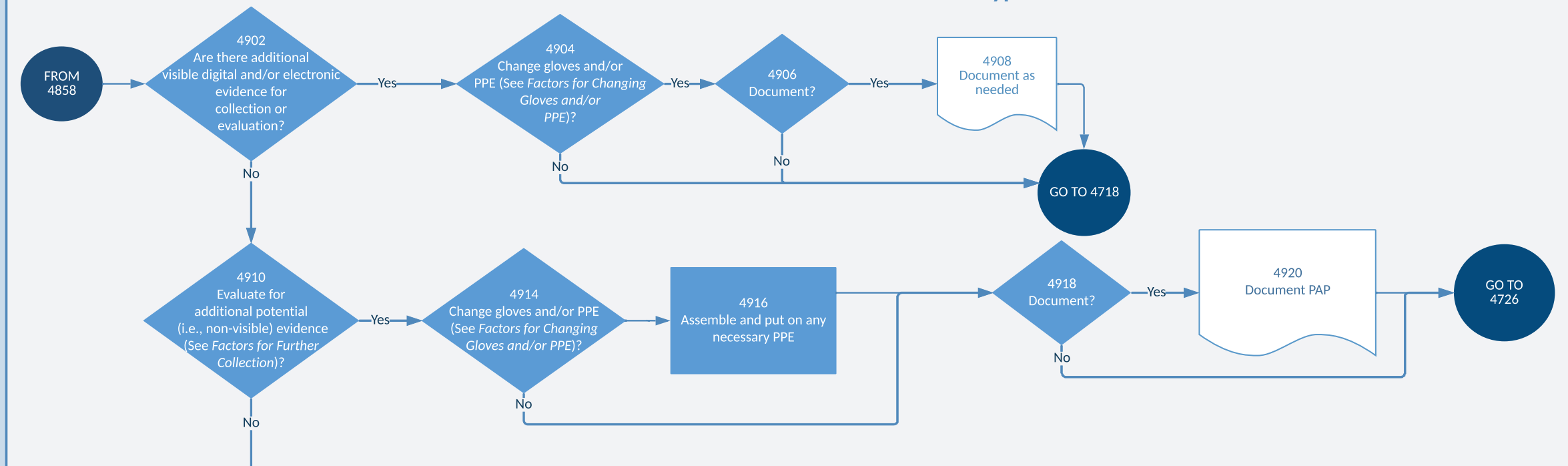


- #### Factors for Whether to Take the Entire Item
- **Timing:**
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    - Expediency vs thoroughness or better technology
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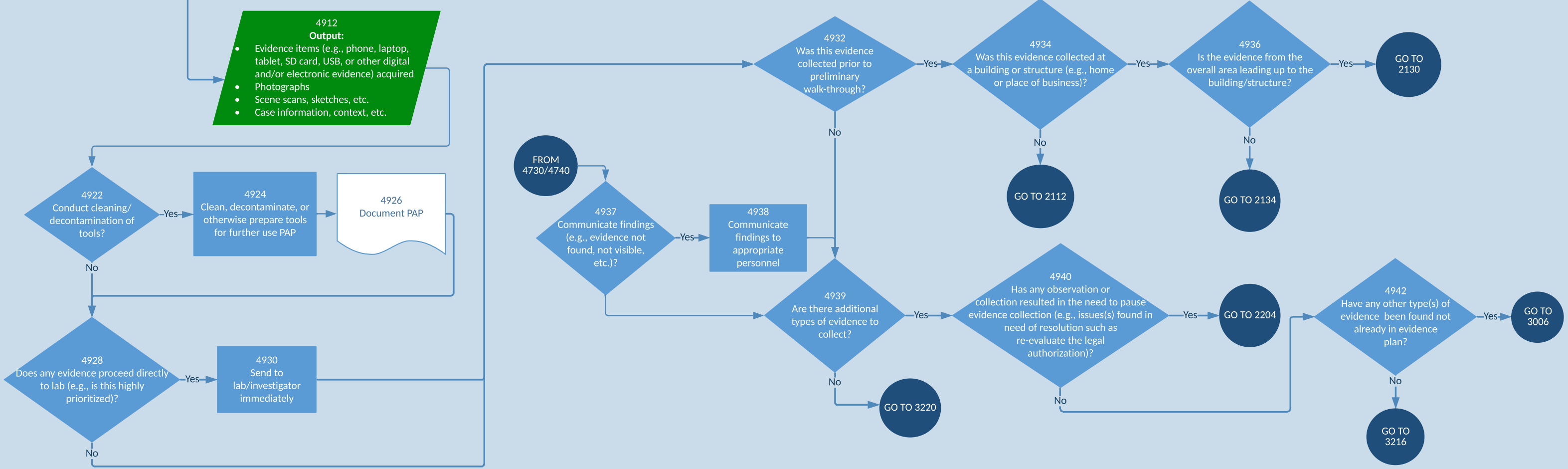
4900 - Digital Evidence Search and Collection (3 of 3): Search Evaluation and Completion

Conduct Search Evaluation for Evidence Type



- Factors for Changing Gloves and/or PPE**
- Obvious contamination
  - There is a different area for processing next set of evidence - risk assessment for contamination
  - Regular changing out of general consideration/caution
  - Personal contamination risk (excessive sweat, etc. from SI)
  - Agency SOP
  - Risk of carryover/cross contamination to another scene collection processing procedure (processing a suspect vs the scene)

- Factors for Further Collection**
- SOP
  - Training, experience, etc.
  - Initial scene inputs/information given, e.g., surveillance of a person of interest, or other circumstances given the question being asked/investigation type/scene context
  - Additional information obtained during the search
  - Risk from not collecting
  - Analysis to be conducted
  - Evidence type
  - Suspected crime type (if applicable)
  - Additional evidence to be collected based on warrant or other legal authority



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5000 - Scene Disposition and Release

Conduct Final Walk Through and Collection Evaluation

FROM 3224/3228

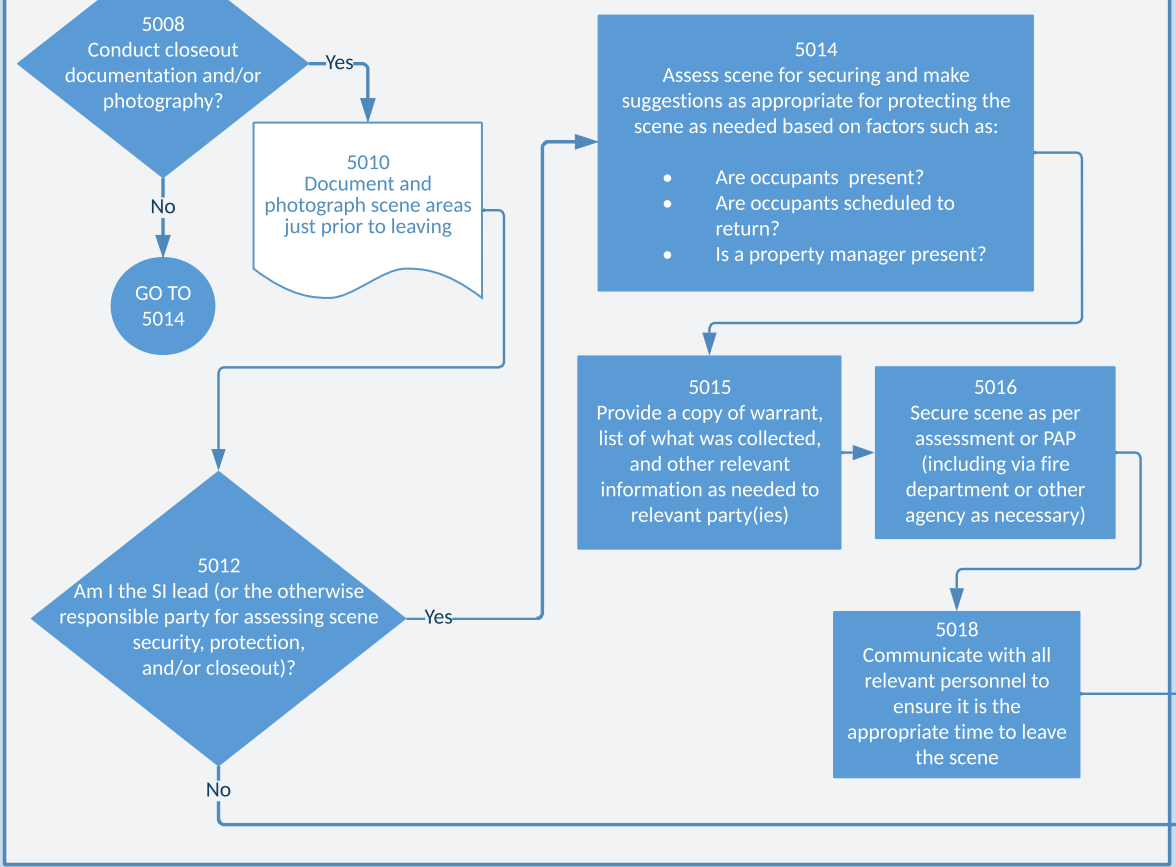
- 5002  
Input:
- Item(s) collected (including documentation) of collection and personnel who collected
  - Documentation of scene (including scene type, photos, diagrams, forensic survey, entrance, exit, etc.)
  - Scene information (e.g., address, date, time, suspected crime type (if applicable), weather conditions, fatalities, etc.)
  - Updated scene plan (e.g., notifications made, assigned roles, information from walk through, safety information, equipment and personnel needs, triage/emergent issues/order of collection, time constraints, etc.)
  - Legal basis and conditions (e.g., warrant, consent, etc.)
  - Relevant personnel (e.g., who contacted SI, case detective, homicide team, POC, etc.)
  - Case scenario

- 5004  
Conduct final walk through (possibly with the same personnel as the initial walk through) in order to:
- Ensure no evidence or equipment is left behind
  - Determine all necessary evidence has been collected (e.g., nothing new that wasn't previously flagged for collection)
  - Communicate with all relevant personnel (including detectives, DA, medical examiner etc.) and conduct debriefing to advise on:
    - What evidence was collected
    - What processing took place
  - Advise/determine any transport or processing of deceased individuals as needed
  - Speak to witnesses if needed
  - Communicate any hazards in need of cleanup to relevant authority if needed
  - Corroborate the total number of packages being transported corresponds accurately to evidence collected
  - Establish all trash has been collected
  - Ensure appropriate utilities or other public works have been contacted (e.g., cleaning, fire department or other needs)
  - Photograph scene as needed (e.g., how the scene was left in the event of any damage or alterations)
  - Consider investigative questions and context and determine collection has addressed all necessary questions
  - Assess whether there are any secondary scenes in need of processing
  - Evaluate whether any collection and processing needs to be completed

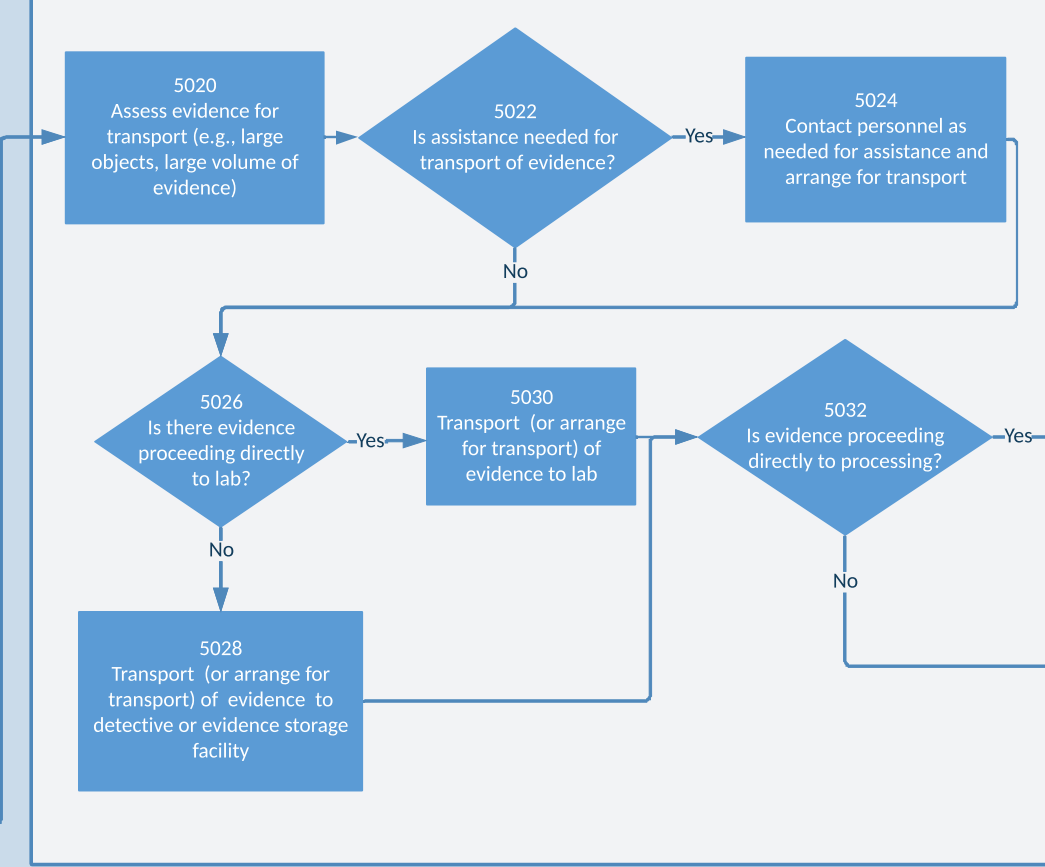
5006  
Have communications or walk through led to additional evidence in need of collection?

RETURN TO 3010

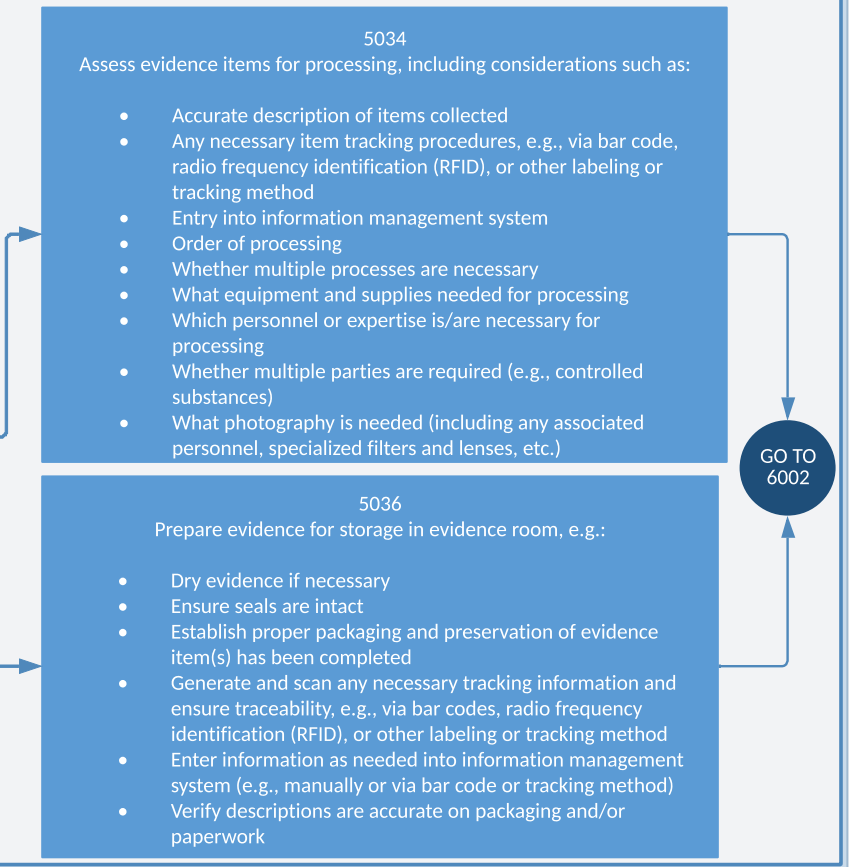
Secure Scene for Closeout



Perform Evidence Transportation Related Tasks

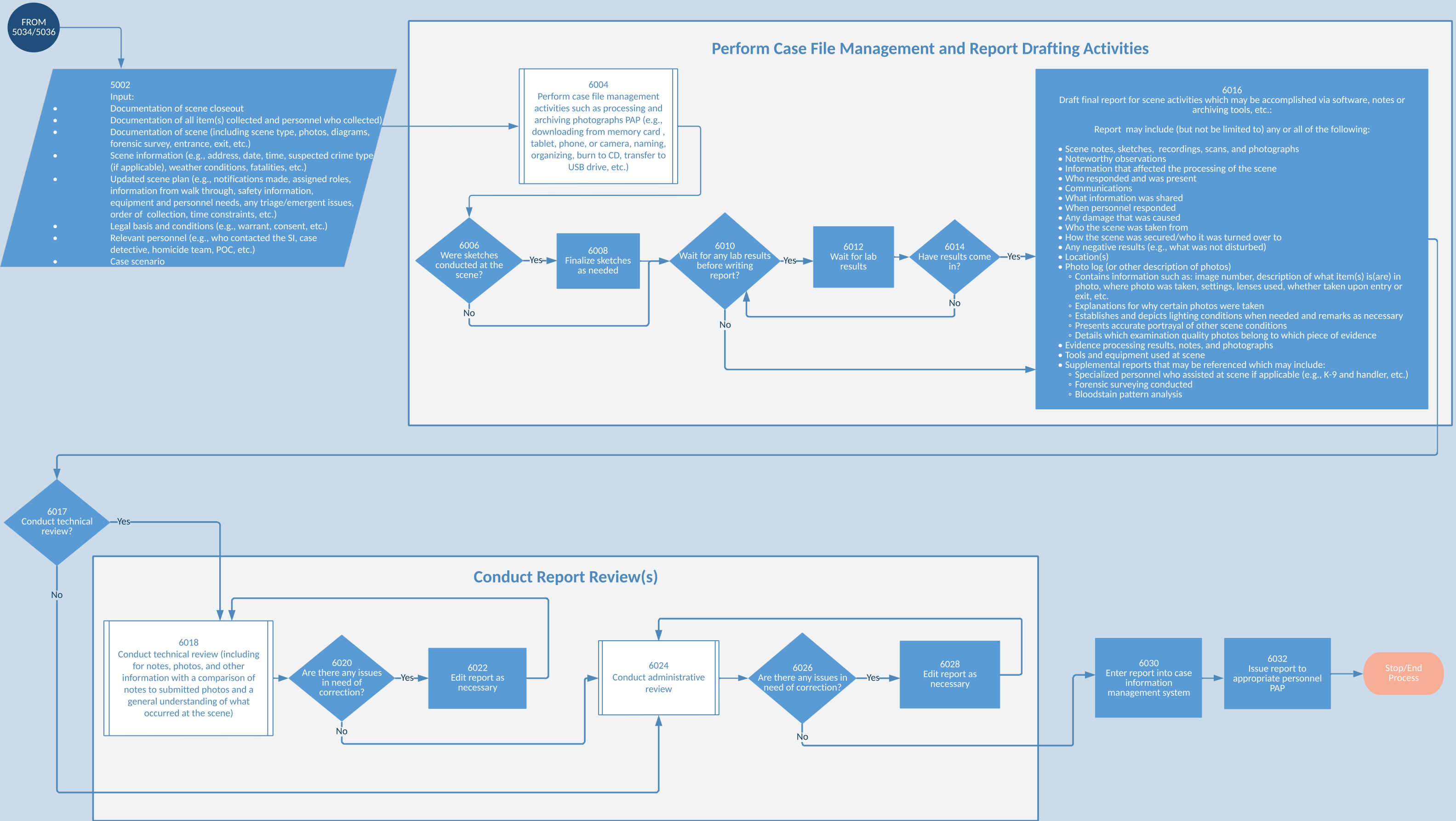


Perform Evidence Prep Based on Destination



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6000 - Case File Management and Reporting



## Glossary of Terms and Definitions\*

**Directed collection:** An exact location has been indicated for the location of the item(s) to be collected (e.g., via search warrant, consent or other information).

**Documentation:** May occur through various mechanisms including but not limited to: written notes, recording via voice or video, notes/annotations on item(s), reports, etc.

**Evidence Collection Plan:** A plan devised in order to safely and effectively collect evidence which takes into account factors such as the circumstances of the scene, suspected crime type (if applicable), personnel expertise, and order of collection of the items.

**Exigent Circumstances:** Circumstances that are of such urgency as to justify a warrantless entry, search, or seizure by police when a warrant would ordinarily be required.

**Grid Search:** A methodical search for potential items of evidence for collection where crisscrossing virtual strips or lines, forming a grid pattern, are used to walk along at the scene in order to look for potential evidence.

**Implied Consent:** A manifestation of consent to something through conduct, including inaction or silence, e.g., calling 911, asking for police response or assistance, etc.

**Line Search:** A methodical search for potential items of evidence for collection where virtual strips or lines are used to walk along at the scene in order to look for potential evidence.

**Open Search:** Circumstances for a crime scene search that is conducted when there are no specific items or exact location for items in need of collection.

**Point of Ingress:** Entry point for a building or structure.

**Search Plan:** A strategic plan that may be devised by scene personnel to search for collection in a specific way such as via zone or a line search.

**Scene Plan:** An overall plan or strategy for the search of a scene for evidence that encompasses evidence item collection, the search for these items for collection, the assignment of duties for personnel, safety, legal authorization, and equipment needs among other things.

**Special Populations:** Populations, that when represented at a scene as evidence or as part of the actual scene (e.g., via land type and use, property, etc.) must be treated according to specific considerations with regard to collection, preservation, and other factors, often as defined by law. Ex. Native Americans, children, etc.

**Spiral Search:** A search for the potential collection of evidence items where personnel will start either from the center of the room (outward) or from the periphery (inward) to search for items. Two investigators may also search together, one moving from the center towards the periphery and another vice versa.

**Targeted Search:** Circumstances for a scene search that occurs when there are specific item(s) in need of collection, however the exact location of the item(s) is not known to investigators.

**Transient Evidence (or Perishable Evidence):** The components of physical evidence that may be predicted to fade or vanish within a given time range. Transient evidence will lose its evidentiary value if not stored and conserved. ex. A footwear impression in snow.

**Zone Search:** A search for the potential collection of evidence items that occurs where the scene is virtually divided into different zones. The number of zones depends upon the size and complexity of the scene.

**Abbreviations:**

**PAP:** Per Agency Policy  
**PIO:** Public Information Officer  
**ICS:** Incident Command System  
**SI:** Scene Investigator

**References:**

CSI Textbook: [https://www.goodreads.com/en/book/show/1784198.Practical\\_Crime\\_Scene\\_Processing\\_and\\_Investigation](https://www.goodreads.com/en/book/show/1784198.Practical_Crime_Scene_Processing_and_Investigation)  
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Exigent Circumstances: <https://www.merriam-webster.com/legal/exigent%20circumstances>

Implied Consent: <https://www.collinsdictionary.com/dictionary/english/implied-consent>

ICS: <https://training.fema.gov/hims/>

Transient Evidence: <https://thelawadvisory.com/what-is-transient-evidence/>

Grid, Line, Spiral and Zone Searches adopted from: <https://www.forensicscienceexpert.com/2020/01/crime-scene-search-methods.html>