

If you own property in Orange County and want to dig, trench, plant trees, or build anything that breaks the surface, underground utilities need to be on your mind before the shovel hits dirt. I have seen everything from harmless near misses to gas leaks that shut down whole streets because someone assumed "the lines can't be that close to the surface."

The core question many homeowners ask is simple: can you safely locate your own underground utilities, or is it smarter to hire a professional utility locator?

The honest answer is: you can do a few basic things yourself, but you cannot safely depend on DIY locating [Orange County vacuum excavation](#) alone. In California, you are required to call 811 for public utilities, and in many situations you should bring in a private utility locating company to map what 811 will not touch.

The details matter, especially in a dense, older, and heavily serviced region like Orange County.

## What utility locating actually is

Utility locating is the process of finding, identifying, and marking buried utilities before any excavation. That includes:

- pressurized lines such as gas, water, and irrigation
- electrical and communication lines such as power, phone, and fiber optic cable
- gravity systems such as sewer laterals and storm drains
- private systems such as pool lines, landscape lighting, and septic systems

The goal is not just "there's something down there," but "there is an electrical line here, within a certain tolerance, at roughly this depth, running this direction."

Depth is usually an estimate. Soil shifts, grading changes over the years, and original installation depth might not match current codes. So when people ask, "How accurate is utility locating?" the honest answer is: it can be very accurate horizontally, sometimes within a few inches, but depth is an approximation unless potholing is done.

## What a utility locator does, in real terms

A professional utility locator does more than "wave a wand over the ground." A typical visit in Orange County often includes:

They review available records. They look at utility maps, as-builts if you have them, and any notes from previous work. Records are often incomplete or wrong, but they are a useful starting point.

They walk the site. An experienced locator reads the site visually: transformer locations, meter positions, cleanouts, valves, irrigation boxes, and existing utility markings. They build a mental picture before they turn on any equipment.

They use a mix of equipment. This is where experience and judgment matter. They choose between electromagnetic locators, ground penetrating radar, sondes, tracer wires, acoustic tools, and sometimes simple hand digging around suspected spots.

They mark and document. They apply the correct utility marking colors on the ground, flag key routes, and often provide a sketch or digital map. For commercial work or subsurface utility engineering, you might receive CAD or GIS files with utility locations and quality levels.

They advise. A good locator does not just walk away after painting lines. They explain what was found, what could not be confirmed, and where you should use extra care. They also outline the limitations, so you are not misled into thinking the marks are absolute.

## **Public vs private utility locating: why it matters**

This is where many homeowners get tripped up.

Public utility locating covers the lines that belong to the utility companies, from the main in the street up to the utility's point of responsibility. When you call 811, the public locators mark those lines at no charge to you. That includes most gas, electric, telephone, cable, and water mains and services up to the meter.

Private utility locating covers any buried line on your side of the utility's responsibility. In practical terms, this can include:

- all electrical lines from your main panel out to a detached garage, shed, or landscape lighting
- water lines after the meter, including to irrigation, pool equipment, or outbuildings
- sewer laterals on private property, septic tanks and leach fields
- private fire lines, reclaimed water, and non-utility owned fiber

That is why "Does 811 locate private lines?" is such an important question. The short answer is no, 811 does not locate private lines. The 811 system coordinates public utility locators, not private systems on your property.

When people ask, "What does 811 not locate?" the list is long: everything from your pool plumbing to low-voltage lighting, from private security system conduits to water features. If you are digging near any of these, a private locator is the right tool.

## **Is calling 811 the law in California?**

In California, using the 811 service before you dig is not optional. It is required by law. The relevant rules fall under California Government Code 4216, often referred to as the "Dig Safe" law.

If you are excavating, trenching, boring, driving stakes, or doing any work that disturbs the soil, you must notify the regional notification center, which is 811. The only exceptions are truly minor, shallow activities, but in practice you are almost always better off calling. The question, "Is it illegal to dig without calling 811 in California?" has a practical answer: yes, you are exposed to legal and financial liability if you damage utilities and did not use 811.

So, who do you call before digging in Orange County? You start with 811. For many projects, you will then also contact a private utility locator to fill the gaps.

## **Is utility locating free in California?**

Public utility locating through 811 is free. The utilities fund this service. If you are digging, you should assume that using 811 is part of the normal preparation process and costs you nothing out of pocket.

Private utility locating is not free. The property owner or project owner pays a private locating company directly. This is where questions like "How much does private utility locating cost?" and "Who pays for utility locating?" come into play.

Homeowners sometimes hope that 811 will "take care of everything." It will not. Think of 811 as the starting point, not the full solution.

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# ORANGE COUNTY UTILITY LOCATING



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## How much does utility locating cost in Orange County?

Costs vary based on property size, complexity, and how many types of lines need to be found. For a sense of range in Orange County:

For a simple residential visit, where the locator is checking a small area of a typical yard and looking for a few private lines like power to a shed or an irrigation main, you might see prices in the few hundred dollar range. If ground penetrating radar is needed, or if the site is large or has complex history, the price can climb into the higher hundreds.

For commercial or construction sites, especially where subsurface utility engineering (SUE) is required, pricing is typically quoted project by project. SUE involves assigning quality levels to mapped utilities, sometimes including vacuum potholing to verify depth and alignment. That can run into the low thousands or more, depending on scope.

Compared to repair costs, these numbers are modest. Damaging a buried electrical line can easily cost hundreds to low thousands to fix. Cutting a fiber optic cable that feeds a business park can reach into the tens of thousands when you factor in emergency response, repair work, and potential claims for lost service. A serious gas line incident can come with far greater consequences, including fines and liability for injuries or property damage.

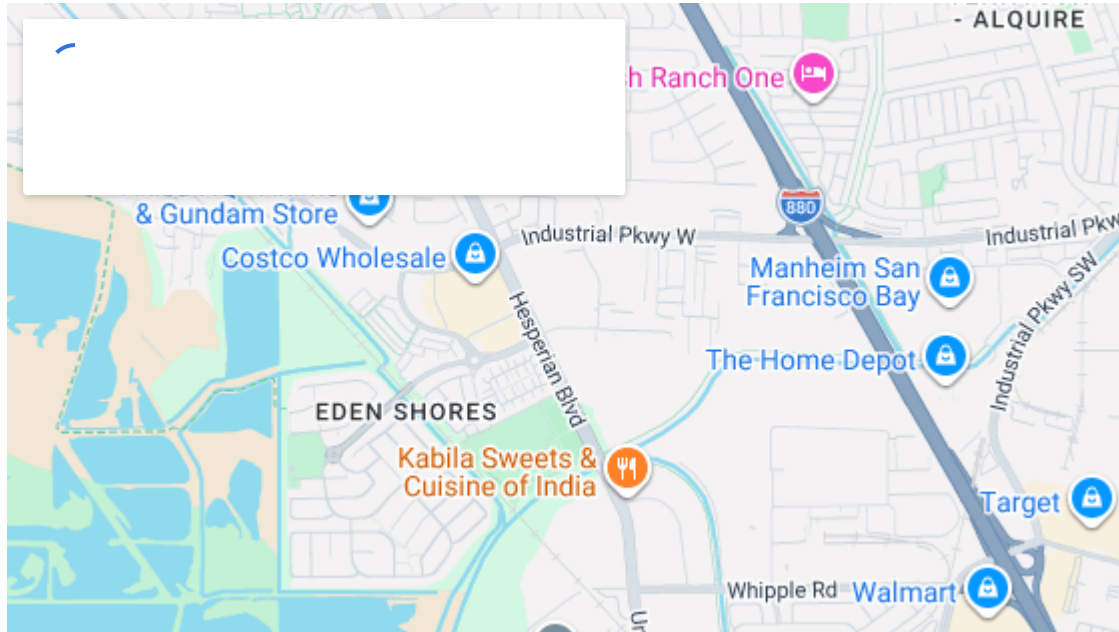
The person doing the digging usually ends up holding the bill. So when people ask, "Who is liable if I hit a utility line?" the practical answer is: the excavator is almost always on the hook, unless they can clearly show that they followed the law, called 811, and the locator made a documented mistake.

## How utility locating works, without the marketing gloss

Most modern utility locating relies on a mix of techniques.

Electromagnetic locating is the workhorse. The locator connects a transmitter to a conductive utility, such as a tracer wire, metal pipe, or cable sheath, and induces a signal. A receiver then detects this signal at the surface. This method is very effective on metallic lines and properly installed tracer wires.

Inductive locating comes into play when direct connection is not possible. The locator lays a transmitter on the ground above the suspected line and radiates a signal, which couples to the buried metal. This is less precise and more prone to interference, but sometimes it is the only option.



Ground penetrating radar (GPR) adds another layer. This is where questions like “What is ground penetrating radar used for?” and “How accurate is ground penetrating radar?” matter. GPR sends high-frequency radio waves into the ground and reads the reflections from materials with different densities. It can reveal non-metallic utilities like PVC pipes, concrete structures, and voids. It is powerful, but not magic. Wet clays, high salinity soils, and certain geologies in parts of Orange County can limit GPR depth and clarity. Accuracy depends heavily on the operator’s experience and soil conditions.

Sondes and tracers fill specialized roles. To locate a non-metallic sewer line, for example, a locator may push a small transmitting device, called a sonde, down the line through a cleanout. The receiver then follows the sonde’s signal from the surface, mapping the route. This is a common answer to “How do you locate a sewer line?” or “Can you locate a septic tank?” On some septic systems, the locator will combine a flushable transmitter, GPR, and old-fashioned probing to find the tank and leach lines.

Acoustic and other niche tools come out for leaks or irregular systems, such as listening for pressurized water leaks or tracing sprinkler lines.

So when people ask, “What equipment do utility locators use?” the honest list includes multiple instruments, not one magic box. Professional locators own and know how to use several types. A homeowner with a rented pipe finder is usually working with a single, limited tool.

## How deep can utility locators detect?

Depth is one of the most misunderstood aspects of locating.

Electromagnetic tools can detect metallic utilities at several feet deep, sometimes deeper, depending on soil conditions, line characteristics, and interference from nearby utilities. In residential settings, most lines are not

extremely deep. Gas and electric are often within 18 to 36 inches, irrigation shallower, and sewer laterals somewhat deeper but still within a few feet in many cases.

GPR can often see to 6 to 8 feet in favorable soils, sometimes deeper in very dry, uniform conditions, and less in saturated or clay-heavy soils. When someone asks, "How deep can utility locators detect?" the honest answer is, "Deep enough for most practical purposes, but not infinitely, and soil conditions can limit what is visible."

Depth readings from both EM and GPR are estimates, not guarantees. That is why safe digging practices always include a buffer zone around marked lines and, for critical work, test holes to physically verify depth.

## **Can utility locators find plastic pipes and fiber?**

This ties into another common question: "Can utility locators find plastic pipes?" and "How do you locate a fiber optic cable?"

Plastic pipes and empty conduits are not conductive, so electromagnetic locators will not see them directly unless a tracer wire or cable is installed along the line. Many newer installations include tracer wires, particularly for water, sewer laterals, and plastic gas lines, but plenty of older Orange County neighborhoods do not.

To locate plastic water or irrigation lines without tracer wire, locators may:

- use GPR to see the pipe as a contrast in the soil
- insert a small traceable rod or sonde through a cleanout, valve, or hose spigot
- rely on acoustic methods in pressurized systems

Fiber optic cables, even though non-metallic, are usually installed with metallic locating tape or sheathing, or alongside a tracer wire, precisely so they can be found. If that metallic element is present and continuous, EM locating works very well.

Without tracer wires or metallic components, finding non-metallic utilities becomes more of an art and is rarely a DIY task.

## **Utility marking colors: what the paint and flags actually mean**

Orange County sidewalks, streets, and yards often look like abstract art after a round of utility locating. Each color has a specific meaning. When people ask, "What do utility marking colors mean?" or "What does red paint mean on the ground?" they are referring to the American Public Works Association (APWA) color code:

Red marks electric power lines, cables, conduits, and lighting cables. If you see red paint or flags, do not assume it is low voltage. It could be a primary power feed.

Orange marks communication, alarm or signal lines, cable TV, and fiber optic. So when you see orange utility flags, you are typically looking at phone, internet, or communication conduits.

Yellow is for gas, oil, steam, petroleum, or other gaseous materials. In Orange County, yellow is often natural gas lines.

Blue marks potable water. Purple is for reclaimed water, irrigation, and slurry lines. Green marks sewers and drain lines. Pink is often used for temporary survey markings. White indicates the proposed excavation area, which answers the question, "What is the white paint on the ground for?" It is your way of telling locators where you plan to dig.

Understanding these colors helps you read your property before you dig and gives you a sense of the complexity below.

## How long does utility locating take?

Time depends on the size and complexity of the site.

For a small residential job, a private locator may spend 1 to 3 hours on site, plus time reviewing records and preparing simple documentation. A large commercial parcel could require a full day or more, especially with GPR surveys or SUE-level documentation.

The 811 process has its own timelines. In California, you generally need to call 811 at least 2 working days before you dig, but no more than 14 calendar days ahead. Locators then have a required window to respond. So when people ask, "How far in advance do you need to call before digging?" the practical answer in Orange County is: call at least 2 business days before, and earlier if your project is large or complex.

## What happens if you cut a utility line?

The immediate answer depends on what you hit.

If you hit gas, you may hear hissing, smell an odorant, or see disturbed soil blowing. You should leave the area, keep others away, avoid anything that could ignite the gas, and call 911 and the gas company.

If you cut electrical, you might see arcing, sparks, or a sudden shutdown of power. Even if you think the line is dead, treat it as energized. Step away, prevent access, and contact the utility.

If you sever communication or fiber, the damage might seem harmless: no explosion, no sparks. But the service disruption could affect many homes or businesses. Repairs often involve specialized crews and can be expensive.

After the emergency response comes the bill. "How much does it cost to repair a damaged utility line?" can range from a few hundred dollars for a small residential irrigation line, to many thousands for gas and electric, to potentially tens of thousands for major fiber optic damage or costlier mains. If an accident injures someone or causes property damage, the costs escalate dramatically.

If you dug without calling 811, or ignored obvious markings, you are in a very weak position to argue you are not responsible.

## Can you locate your own underground utilities?

You can do some basic homework yourself, and you should, but you should not rely on DIY locating as your sole safety measure.

Here is where a short checklist is actually useful.

### When DIY checking is reasonable

- Reviewing old plans, permits, and inspection reports that might show sewer lines, water services, or electrical routes.
- Identifying obvious surface clues like meters, cleanouts, hose bibs, valves, electrical panels, and irrigation manifolds to infer likely routes.

- Using shallow hand digging and probing in low-risk areas, once 811 has marked public lines and you are confident no private lines cross the specific spot.
- Marking your intended excavation area with white paint or flags so 811 and private locators know exactly where you plan to work.
- Using a simple tone tracer or rental locator for non-critical tasks, but only as a supplement to 811 and not as a replacement.

These DIY steps help you plan and ask better questions. They do not remove your obligation to call 811, nor do they match the accuracy of professional locating.

## **When you should hire a private utility locator**

- Any time you are digging deeper than a typical planting hole, especially for footings, retaining walls, pools, or major landscaping.
- When you know or suspect there are private lines, such as power to a detached garage, pool equipment, or landscape lighting, in or near the work zone.
- When you need to locate a buried water line, gas line, sewer line, septic tank, or private fiber cable with reasonable accuracy.
- When public marks from 811 are unclear, conflicting, or obviously incomplete for the area you plan to disturb.
- For commercial projects, large renovations, or any situation where subsurface utility engineering or detailed documentation is required.

The cost of a professional locator is almost always less than the cost of a single serious mistake.

## **Do you need a permit to dig in Orange County?**

Permits depend on the nature and location of your work.

For small landscape work on your own property, such as planting shrubs or small trees, you often do not need a permit, but you still must respect 811 requirements. For structures, retaining walls, pools, or any work near property lines or public rights of way, permits are generally required from your city or the County of Orange.

If you are cutting into sidewalks, streets, or parkways, you will almost certainly need an encroachment or excavation permit. Those permit processes assume that you will use 811 and often expect proof of utility coordination.

Locating does not replace permitting, and permitting does not replace locating. They are separate obligations.

## **How accurate is professional utility locating?**

Accuracy depends on:

- the tools used and whether utilities have tracer wires or metallic components
- the soil and subsurface conditions
- the presence of nearby utilities that can cause signal interference
- the locator's experience and method

A careful locator using the right tools can typically place marks within a foot or so horizontally under good conditions, often tighter than that. Depth estimates are less precise, and professionals will explain that to you.

Subsurface utility engineering introduces quality levels (A through D) that describe how confident the information is. For example, quality level A means a utility was exposed and surveyed directly, while level D might be based only on old records.

When you ask, "How accurate is utility locating?" or "How accurate is ground penetrating radar?" the key is not a single number, but a clear understanding of what was done, how, and with what confidence.

## **Should homeowners hire a utility locator, or just rely on 811?**

For many small, shallow projects, 811 plus caution might be enough. If you are planting a few shrubs far from any visible utilities, and 811 has marked the public lines that do not cross your dig area, hiring a private locator might be overkill.

But once you move into deeper excavations, trenching, or work anywhere near obvious utility routes, the risk climbs quickly. The presence of private lines that 811 will not mark is the deciding factor. In older Orange County neighborhoods, I have lost count of the number of "mystery lines" we have found: old gas stubs, abandoned conduits, live 120 volt feeds to sheds, unrecorded irrigation mains.

If you are asking yourself "Can I locate my own underground utilities?" the fact that you are asking is often a sign that your project is more than just a small planting hole. At that point, a call to both 811 and a qualified private locator is a smart investment.

As for "What is the best utility locating company in Orange County?" the truth is, "best" depends on your needs. Look for companies that:

- are experienced with both residential and commercial work
- can explain their methods and equipment clearly, including when they use ground penetrating radar
- carry proper insurance
- provide some form of documentation, even if it is a simple sketch, and are willing to walk you through the marks on site

The right locator will feel less like a mysterious technician and more like a partner helping you avoid expensive and dangerous surprises underground.

If you treat utility locating as a core part of your project planning, not an afterthought, you drastically reduce the odds of becoming the story everyone on your street talks about for the next ten years.

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